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ABSTRACT

The six articles in this issue concern aspects of suggestive teaching and learning and the application of the theory of suggestology in the classroom. The articles are as follows: (1) "Music, Pedagogy, Therapy: Suggestopaedia," by Gabriel Racle: (2) "Suggestopedia in Budapest: Around a Language in 50 Days," by Stanley Krippner: (3) "Indirect Verbal Suggestion: Its Use in the Classroom," by Allyn Prichard: (4) "Case Study--Now Johnny Can Read," by Dean F. Held: (5) "The Lozanov Effect: A Scientific Explanation," by Douglas Shaffer; and (6) "Comparisons of a Kinesthetic, Cognitive and Natural Strategy Relaxation Process," by Mathias E. Stricherz. (AMH)

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THE JOURNAL OF SUGGESTIVE-ACCELERATIVE LEARNING AND TEACHING

Guidelines for Contributors

The Editor welcomes submission of manuscripts on an interdisciplinary nature relevant to all aspects of suggestive learning-teaching-therapy counseling within the theoretical and procedural confines of Suggestology and/or Suggestopedia. The JOURNAL OF SUGGESTIVE ACCELERATIVE LEARNING AND TEACHING will publish a wide variety of articles - including critical reviews, theoretical analyses, speculative papers, case studies, quasi-experimental studies, as well as reports of empirical research (basic or applied) of major significance. The basic focus is Suggestopedia theory , research and application.

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Music, Pedagogy, Therapy: SUGGESTOPAEDIA

Gabriel L. Racle, Ph.D.

Abstract

The contribution of music to pedagogy and successful learning has been recognized for some time. However, to the best of our knowledge, suggestopaedia is the only pedagogical approach using music as an essential component of the teaching process. Music plays a large part in a suggestopaedic course in creating a pleasant, suggestive atmosphere, thereby making it possible to overcome anti-suggestive psychological barriers or reduce their impact. Music helps to create a state of receptiveness which is induced by an apparent state of passiveness. This pseudopassivity permits the creation of a state both of psychological relaxation and of high concentration involving intense superior cerebral activity. The positive effects of music have frequently been shown through research and experiments. It is thus possible to propose a number of different hypotheses to explain the role of music in suggestopaedia. All these hypotheses are of great interest since they may lead to research linking psychology and suggestopaedia (as well as physiology and suggestopaedia) and clarifying the role of integrated music in the learning process. It also seems that a suggestopaedic approach answers the questions or criticisms made by a number of researchers regarding the pedagogical use of the full capacity of the brain. However, it is not yet easy to determine the specific effects of music in a suggestopaedic approach. This is to be expected since this teaching system is based on gestalt principles, and therefore each element has a significance in relation to the other elements. Further research will need to be done in this area before more specific information can be offered. But the systematic introduction of music into pedagogy is undoubtedly an innovation with numerous beneficial results.

Introduction

The contribution of music to pedagogy and successful learning has of course been recognized for some time. The findings of research projects and experiments in this area are listed in numerous specialized bibliographies. However, although there have been considerable developments throughout the world in the field of melody therapy or music therapy, the same progress does not seem to have been made with respect to melopaedia or musicopaedia used with apparently "normal" students of all ages. To the best of our knowledge, suggestopaedia is the only pedagogical method using music as an essential component of the teaching process. Given that suggestopaedia is based on the findings of research and experiments in the field of psychotherapy, it does not appear paradoxical to refer to it in the context of music therapy. In the following pages, we shall offer a synthesis of the role of music in suggestopaedia, illustrating through a few selected references the numerous research projects being conducted in this area.

Suggestopaedia is the result of research conducted by the Bulgarian physician and psychiatrist, Georgi Lozanov, who is currently Director of the Sofia Institute for Research in Suggestology. After having practiced psychotherapy for fifteen to twenty years and having proposed and tested many original psychotherapeutic methods, Dr. Lozanov came to the following conclusion: irrespective of the method used, there are a number of factors underlying successful psychotherapy which are invari-

ably the same. At the Fourth International Congress of Psychology and Psychotherapy in Vienna in 1968, Dr. Lozanov presented a paper on his findings, the essence of which may be summarized as follows: "The results obtained (in psychotherapy)...confirm our view that there is a therapeutic mechanism common to most psychotherapeutic methods" (Lozanov, 1971, p. 71).

Underlying these successes and this psychotherapeutic mechanism are factors which Dr. Lozanov termed "suggestive," or located on a subconscious (or barely conscious) and non-rational level: "What is suggestive is that which is not conscious and rational..." (Lozanov, 1975, p. 292). Although these suggestive factors play a significant role in our lives, they generally go unnoticed. The specific purpose of suggestology, or the science of suggestion, is to study the subconscious relationship between man and his environment and the effects of such messages. Although the signals which we receive from our environment are not perceived consciously, they are significant since "at all times and in all facets of communication we communicate with one another not only logically and consciously but also subconsciously and emotionally" (p. 282).

In specific communicative situations, such as those between a doctor and patient, or teacher and student, these suggestive elements assume particular importance. "And after working for about fifteen to twenty years as a psychotherapist, I still think there are some communicative factors in this psychotherapeutical communication which are the main points in getting some good results and extracting these suggestive factors step by step. I've come to the conclusion that the same suggestive results are taking part in all pedagogical processes" (p. 282).

From these few statements we can easily appreciate how Dr. Lozanov moved from psychotherapy to pedagogy; he conducted a wide-ranging and in-depth analysis of the communication process and specifically of the subconscious and emotional relationships found in treatment (doctor/patient) or learning (teacher/student) situations.

The Arts and Music

The arts and music are a particularly rich area since the arts, in the broadest sense of the term, convey considerable suggestive value: "The fine arts are the highest form of suggestion...The arts indeed create a specific environment of an emotional nature which stimulates individual capacities and increases receptiveness." (Racle, 1975, p. 218). The arts must therefore be integrated into a suggestopaedic teaching method. The link between psychotherapy and pedagogy is that they both use suggestion - the direct path to the subconscious to achieve the desired effect. As is to be expected, the arts, which convey considerable emotional value, play a role in suggestive pedagogy; by "suggestive pedagogy" we mean a teaching system integrating the principles of suggestology, which Dr. Lozanov has termed "suggestopaedia". Mime, singing, dramatic expression, artistic reading and rhythm are all included in the suggestopaedic learning process, as are concert recitals which are perhaps the best known artistic component of Lozanovian suggestopaedia.

We must appreciate the context in which music is used in suggestopaedia to understand its role in the teaching system. This element from the world of the arts combines with psychology and teaching to form a global pedagogical system, a "gestalt pedagogy" (Racle, 1977b) geared to the whole personality of the student. This globality results from the global activation of the personality" (Lozanov, 1975, p. 297). We should also mention that in 1965 Dr. Lozanov did in fact propose an integral psychotherapy which, when tested, proved successful.

"The use of music as an integral part of the suggestopaedic teaching method is based on experiments and developments in the field of music therapy.

"Although the results of experiments in music therapy may be applied to some extent to suggestopaedia, it should be remembered that the latter poses new questions and new problems" (Lehman, 1973, p. 264).

A special part of suggestopaedia language courses for adults is devoted to music. As the teacher reads the work to be covered in the lesson, music is played in the background. The teacher adjusts his voice to the volume of the music and also tries to follow the rhythm of the piece being played. Meanwhile, the students sit comfortably in their armchairs and listen. They are asked to pay attention to the music. The student is thus induced into a specific state which Lozanov describes as "concert pseudopassiveness": "Through the music, the normal physical tension of the person listening gradually decreases" (p. 265) and his receptiveness is increased. "The person listening is in a passive state and makes no intellectual effort to memorize or understand; he just lets himself perceive the music emotionally" (Lozanov, 1971, p. 247).

Music plays a large part in creating a pleasant, suggestive atmosphere, thereby making it possible to overcome anti-suggestive psychological barriers or reduce their impact. "A suitable choice of music can "open" the human mind psychologically" (Lehman, 1973, p. 265). However, as Dr. Lozanov has stressed, music only acts in association with other recognized suggestive factors, such as prestige and credibility (of the teacher, the teaching system and so on), confidence and willingness (of the student), and the structuring of the courses on two levels (conscious and subconscious).

Role of the Concert

Placebo effect

As a placebo, the concert serves a number of purposes: its effect may be - and indeed is - related to the ritual way in which it is used and the association thus created with the memorizing process (Lozanov, 1974). The significance of this factor, which has been frequently studied, is clearly recognized. However, the process may have been identified too closely with the absorption of a "fake" medicine. The effect of a placebo is not produced simply by using non-pharmaceutical products in place of real medicine. Its effectiveness is in fact in direct proportion to the effectiveness which the persons administering and receiving it attribute to it. The research carried out by Tom McGlashan, Martin Orne and Frederick Evans shows that the effectiveness of the placebo is influenced by the recipient's anxiety level, and that the latter's fear must be allayed as much as possible both through his own attitude to the placebo and through the behavior of the person administering it.

To date, not much research has been done on the use of music as a placebo. However, what is true of a medical placebo is equally true of an "educational placebo." "The placebo is everything except a parasite. The ritual of prescribing a product and all the non-specific factors involved in the trust based relationship between the doctor and patient have a considerable curative effect. The placebo should be considered a standard part of the panoply of medicine" (Evans, 1974) - or of education. By the same token, it seems equally clear that such an effect exists only within a complex system of conscious/subconscious relations and that it does not act as an isolated element. As was briefly mentioned

above, such a view is consistent with the theory and principles expressed by Dr. Lozanov.

Concert pseudopassiveness

The effectiveness of music in suggestopaedia cannot simply be explained away as the result of a placebo. This is also the view of D. Lehman (1973): "...music, considered in the context of suggestopaedia, is not simply a sort of placebo, and ... in a number of individuals the effect of music transcends that of the placebo" (p. 264). Lozanov (1974) himself also expresses this viewpoint: "Studies have shown that the concert performance plays a dual role: on the one hand it is a ritual placebo factor while, on the other, it creates a particular psychic state in the person listening."

Music helps to create a state of receptiveness induced by an apparent state of passiveness, which is in fact only pseudopassiveness associated with a state of both psychological relaxation and of high concentration involving intense, superior cerebral activity. This use of music is probably one of the most useful and beneficial contributions of suggestopaedia. "Through a well-chosen piece of music the moral and physical tension of the person listening gradually drops and a process of psychological self-regulation is begun" (Lehman, 1973). Kohut (1957) had already pointed out that music can help to reduce internal tension and anxiety. Among the "ingredients" which Kuhner (1962) suggests to counteract his patients' anxiety and create a relaxed atmosphere are "a soft background of music" combined with a certain physical ambience created by the setting, all of which should be contained in an "empathetic" patient/doctor relationship. "All these tend toward developing stabilizing emotions such as emanate from feelings of acceptance, comfort, security and trust" (p. 98). Ruiz and Pilon reached a similar conclusion in a comparative study: music therapy/ergotherapy (1969). The work of other researchers could also be cited in this context (Scott, 1960; Gabai-Jost, 1962). When a person listens to a concert, he quietly and passively notices the music and lets himself be emotionally "taken in" by it. This is obviously a mental state (Lozanov) free from fear, anxiety or anguish. This state of receptiveness helps us to memorize considerable amounts of information effortlessly. Music helps create this pseudopassive/receptive state, which is like one piece in a tightly constructed jigsaw puzzle. As Dr. Lozanov has shown (1971), it is theoretically possible to obtain an identical state of receptiveness without the use of music; this can be achieved by making full use of the suggestive effect of other parts of the course with the aid of a teacher who is highly skilled in the suggestopaedic method. However, such methods are the exception, and music provides a simple way of facilitating memorization since it creates a highly suggestive atmosphere. It has also been found that music facilitates long-term memory (Lozanov, 1971, 1975).

The suggestopaedic learning system combines (particularly during concert sessions) apparent external passivity with intense internal overactivity; the latter is produced in the higher nervous system. It should be noted that the state in question is one of mental rather than physical relaxation. Many experiments (Lozanov, 1971, 1977) have shown that physical and muscular relaxation do not in themselves have any specific value (since the results are related not to the relaxed state of the muscles, but to the suggestion contained in the procedure).

Lehman speaks of opening the human mind to describe the same effect. It must be admitted that we do not yet appear to be able to explain all the mechanisms involved in producing this effect. However, we can appreciate the role of music in a suggestopaedic-type approach

(and in many other cases also) by examining some key points in suggestopaedic theory.

The key concept behind suggestology and its numerous applications (suggestopaedia, suggestotherapy, psychogenic anesthesia and so on) is the idea of the double level, or recognition of the conscious/subconscious duality of the individual and the way he relates to his environment. "At all times and in all facts of communication we communicate with one another not only logically and consciously but also subconsciously and emotionally. This communication goes on unnoticed when in use. For example, you are listening to my words right now, the logic of my words, but at the same time, more or less unconsciously you are accepting the intonation of my voice, my face, my behavior, and many, many, many details, unnoticed to me and you; you have some feedback, psychological feedback, a control over the truth of the words I am speaking. You believe or don't believe me..." (Lozanov, 1975, p. 286). The fact is that "everything on this second level plays a considerably important role in teaching. It contributes to the creation of reinforcement of the student's confidence and the credibility of the professor. It facilitates the breaking down of barriers and the reaching of reserves. The teacher (in the case of learning) - like the doctor or the psychotherapist in other fields - must be perfectly aware of the double level and act with this in mind" (Racle, 1975, p. 218). This is a fundamental point: everyone protects himself with psychological barriers, just as the organism protects itself with physiological barriers. There are three such barriers (rational, emotional and ethical anti-suggestive) to be overcome or neutralized in order to activate one's reserves. These barriers are not broken down by a head-on attack, which would be useless, but through the most subtle form of suggestion which, since it acts at the subconscious level though non-specific psychic reactions, neutralizes possible rejection and makes it possible to reach one's reserves.

Music plays a specific role in this double-level operation. "Music may act on the vegetative nervous system and penetrate the subconscious although the individual is paying no attention to it, for example through acoustic stimulants in the form of vocabulary; the individual is, therefore, not required to consciously perceive the music playing, or he may be only partly aware of it" (Lehman, 1973). This idea may be expressed another way. Some authors, such as Dupre and Nathan (1911), consider that the only, or almost only, purpose of music is to take one's mind off things. Esquirol (1772-1840) wrote: "Although music does not cure, it does amuse and therefore comforts."

By retaining one's attention and playing a key role, music creates an emotional climate which has a suggestive effect on the listener; it allays anti-suggestive reactions (tension, anxiety, aggressiveness), and neutralizes the specific action of anti-suggestive barriers, particularly the emotional barrier. At the same time, on the second level, the message (the content of the lesson) is ready by the teacher; it directly penetrates the subconscious, where it is assimilated and stored. No intellectual effort is required to retain or understand: the student "calmly and intuitively gives himself up to the musical program presented" (Lozanov, 1973) while these complex processes are taking place in the higher nervous system. "Through this pseudopassiveness and the suggestive approach which may be geared to overmemorization, for example, anti-suggestive barriers are overcome more easily and the individual's psychic possibilities, which are being held in reserve, are released." (*Ibid* , p. 32). "The role of music in suggestopaedia is to create in the individual a state of psychophysical perceptive harmony so as to make him, in so far as possible, responsive to the action of the suggestopaedic process..." (Lehman, 1973). We therefore decrease tension through the

music (psychological relaxation) and at the same time activate the mental processes (concentration). The positive effect of music has frequently been shown through research and experiments. "We noted (and this was confirmed by the results of opinion polls) that the use of music in a suggestopaedic course has the effect of generally improving the students' results and significantly increasing their ability to memorize" (Lehman, 1973, p. 266): "Daily experience offers convincing evidence of the importance of the factors indicated (authority and pseudopassiveness) which, through a non-specific psychic reaction, increase the effec tiveness of the learning process" (Puntchev, 1973).

"During the course we had a chance of truly assessing the effect of the music sessions. For instance, a student, who for some reason or other had missed one music session, failed to master the material given in such a way as he would have mastered it had he attended the session. The gap caused by the loss of this material was felt by him throughout the course" (Rabcsak, 1975, p. 34). "The results of our experiments have shown that experimental subjects relax when listening to suitable music, take in and assimilate far more information than under normal circumstances. Mozart, Beethoven, Vivaldi, Corelli, Rachmaninov and Tchaikovsky have proven to be most suitable," as Dr. Lozanov explained to a journalist in Sofia (Sofia News, 1974).

Concert pseudopassiveness "resembles the relaxed state in which children perceive the outside world" (Lozanov, 1973, p. 31). This specific state had already been mentioned by Dr. Markoff as early as 1938: "We attain a state of euphoria when we abandon traditional methods and allow our thoughts to run free...By suspending our objective critical faculties we can return to a primitive or childlike mental state." At the end of his *Analysis of Mnemonic Devices* Bower offers a similar conclusion: "To end on a practical note, our prescription to the adult in approaching a new learning task is for him to become as a child again, to tap the wellsprings of his suppressed imaginative talents that have lain buried under years of linguistic development" (Bower, 1970, p. 510). This state is in fact one of openness or receptiveness, which Lozanov terms "infantilization" (Lozanov, 1971, 1973); it is simply a general psychic state of mind, created by the combination of all the suggestive factors present. The joint effect of music and other factors is to strengthen this state, thereby liberating "the plastic qualities of previous ages" (Lozanov, 1973). Altshuler (1954), Assagioli (1965) and Van der Wall (1946) had already stressed the contribution which music can make to improving receptiveness to new stimuli by creating a state of relaxation. However, they did not give such an integrated and comprehensive explanation of the factors involved.

Integration

It will have been appreciated by now that suggestopaedia makes music an integral part of the learning process itself, since it is one of the key elements in the memorization phase. This point is of considerable significance and interest. Music has been treated as a separate or isolated element in many experiments and research projects; it has been a peripheral phase or a later phase but not an integral part of the process itself.

For example, in their study on the "use of music and silence to increase hypnotic susceptibility" Talone, Steadman and Diamond (1973) had their subjects listen "to either ten minutes of recorded music or silence prior to a criterion hypnotic susceptibility scale." Miller (1974) used music as *A posteriori* reinforcement: "experimental subjects

meeting criterion were permitted to remain (in the specific classroom at the end of the arithmetic work period) and listen to either rock or music classics from a cassette tape recorder with headphones." The same type of experiment was conducted by Madsen-Forsythe (1973), Miller, Dorrow and Greer (1974), Madsen, Moore, Wagner and Yarbrough (1975) and other researchers (H. F. Galloway, 1975).

Music is apparently used to precondition the students (Talone *et al*) or to reward them after completing an assignment. The latter case obviously calls to mind Skinner's theory (Skinner, 1971) on behavior patterns and their consequences. The question is whether these research projects do any more than to seek "reinforcing" consequences, with a view to bringing about a change in behavior patterns. In certain cases music would be, therefore, a more effective means of reinforcement than sweets (Madsen and Madsen, 1972). However, it must be recognized that other effects were observed (for example: Zack, 1951; Barrett, 1965; Hanser, 1972). With respect to preconditioning, it is interesting to note that Talone *et al* (1973) obtained identical results by using either music (or silence) or simply by the suggestive effect of the technique used. There is considerable similarity between this technique and the physical relaxation exercises used in certain teaching experiments (Benitez-Bordon & Schuster, 1976; Petrelevicius, 1975; Schuster, 1976). Music seems to be used this way in certain music therapy methods. Guilhot-Jost (1964) use various sequences in which words and music are alternated: in dealing with the problems of a couple, for example, the words are spoken alternately by a man and a woman, and then an extract from Wagner's *Parsifal* is heard; the words are then spoken again, followed by an extract from Cesar Frank's *Panis Angelicus* ; finally comes the complete *Parsifal* and a last reading (pp. 129-133). The same structure is employed to help someone rid himself of a habit (Guilhot, Jost & Lecourt, 1973). However, Jost also proposes, although cautiously, combining music and words. "It is possible to superimpose music from the beginning so long as the work chosen is in perfect harmony with the words spoken. This combination should not be overused but in certain cases it greatly enhances the emotional impact of the words and music" (1964, p. 85). Gabai-Jost (1972) also stress the value of "word-music association" (p. 66). Examples of this combination date back to time immemorial. Contenau (1939) cites various examples in his history of Assyrian and Babylonian medicine (A. Machabey, 1945). Perhaps the history and the role of singing should be re-examined with reference to the incantatory, salutary, soothing, curative or mnemonic effects of rhythmical or litanic forms.

We can therefore appreciate how music is used in suggestopaedia, although in this case the music is played and the lesson read at the same time. The lesson is read artistically and expressively; the teacher ensures that his voice is not louder than the music, stops speaking when there is a pause in the music and follows the melody and the rhythm of the music being played. "Free from all distractions which hamper its functions, the brain resembles a sponge, able to absorb all kinds of knowledge" (Tashev, 1966). This vivid explanation made by Dr. Lozanov undoubtedly explains why words and music, which somehow reduces the self-control of many individuals and makes them more "open" to other people, neurotic defenses can be removed, thereby helping patients in the group to communicate more freely" (Galinska, 1967). The same idea is stated by Jost: "It is extraordinary (in music therapy)...to note how easily a group may communicate. This is of considerable interest from the therapeutic viewpoint and also as regards communication and development" (Leroy, Dars, Jost, 1973, p. 33). *Mutatis mutandis* , the findings of Jost and Galinska endorse those of Lozanov, particularly

when Galinska states: "Music also seems to broaden the patient's perceptive faculties; he becomes more open to suggestions and accepts information more easily" (p. 1040). We find here once again the "particular psychic state" (Lozanov, 1974) mentioned earlier, that combination of receptiveness (pseudopassiveness, infantilization, Lozanov, 1974) and stimulation of higher mental activity (Lozanov, 1971). We can therefore speak of a passive/active state or, to use the Lozanov-Novakow term (1973) a state of "active rest" (p. 133).

Hypotheses

If more were known about the neurophysiology of states of consciousness, these phenomena could certainly be explained. We know that "in the nervous system, stimulation is always accompanied by inhibition" (Deglin, 1976, p. 32). However, the brain works best, particularly in learning situations, when stimulation processes and inhibition processes are harmonized, that is, when there is no opposition between states of vigilance and states of non-vigilance. Learning does not take place solely in a state of vigilance or in one of increased vigilance. Learning may occur in a state of "cerebral readiness:" "This readiness disappears when there is a blockage, be it a blockage caused by overstimulation or by inhibition" (Chauchard, 1976, p. 11). If an individual is overexcited he can neither concentrate nor sleep. "Although a person may want to pay attention, he cannot if he is tense; the same methods to achieve relaxation and combat nervousness are used to enable an individual both to concentrate and to sleep" (p. 10). We must therefore avoid two extremes: blockage through nervousness or overstimulation and blockages caused by inhibition. In his studies on conditioning, Pavlov found that overvigilance led to excessive inhibition and that dogs fell asleep when they were overvigilant. "We can appreciate, therefore, that an optimum state of cerebral inhibition is necessary for successful teaching, particularly in today's world with its prevalence of nervous fatigue. As we unfortunately tend to become tense and overvigilant, thereby becoming blocked, we must use relaxation methods to return to the optimum state" (p. 12). This is precisely the contribution of music in a suggestopaedic course, what Lozanov wants - "a set-up similar to that of attending a concert" - is curiously close to Chauchard's view: "The vigilant aspect of a calm and relaxed presence free from worry or anxiety, this state of alertness enjoyed by the individual who is more alert and more receptive since he is not nervous" (*ibid*). Balevski expresses the same idea very clearly: "The higher forms of attention are not related to the generalized excitement of the cortex but to the inhibiting processes of needless reactions and, as N. Livanov has shown, to an increase in the number of cerebral areas acting in harmony" (1976). Balevski's research (1975, 1976, 1977) has shown that in normal memorizing conditions people who speed up their cerebral biolectrical activity from fifteen to twenty per cent record the highest percentage of words memorized. A further increase in tension has the effect of decreasing the percentage of words memorized: "For more efficient memorization, optimal tension and not maximum tension of the brain cells must be obtained." In the case of memorization in suggestopaedic conditions (intonative reading with music in the background), optimal memorization is provided through an increase from five to ten per cent in cerebral biolectric activity. Here, nervous energy is saved; the predominant factor is "the process of inhibition and not the process of intense stimulation." We are witnessing that state "of psychic relaxation which creates optimal conditions for sustaining selective attention. This is the explana-

tion of the psychohygienic effect, which is based on the suggestopaedic system of study." Lozanov, Balevski, Stomonyakov (1973) noted that: "During the concert session the alpha system of the majority of course members increases above the initial level before class, and the beta-rhythm drops under the initial data." Noncheva (1975) made a similar finding: "During the session, although the presentation of study material continued, the excitability of the cerebral cortex decreased in comparison with the data before classes." This would explain the role of music in suggestopaedia. "A sound pedagogical method requires an optimum of inhibition which removes oppressiveness without affecting awareness. The prototype here is the painless childbirth method, where in opposition to the method of childbirth under hypnosis the mother remains actively aware, and reassured by explanations takes cerebral control of the birth" (Chauchard, 1976, p. 13).

The prototype of this is also the suggestopaedic approach developed by Dr. Lozanov, where music is certainly one of the most original and effective components. In this context, we might quote Chauchard once again: "Thus cerebral physiology fits in perfectly with psychology to explain suggestive reactions" (1974).

However, we must also relate the role of music to the specific activities of the hemispheres of the brain: When a new lesson is read by the instructor, classical music is played in the background and the students are asked to pay attention to the music. This should activate the right hemisphere (Bogen, 1975) and, conversely, relax the left hemisphere, thereby facilitating reception of the linguistic message in accordance with the mechanism mentioned above (Balevski, 1976). The simultaneous presentation of two elements which, theoretically, are the speciality of their respective hemispheres, enables the brain to call upon all its resources to assimilate new data. Bogen (1975) asks: "Can we reasonably hope that many hours devoted to the practice of bonsai, ikebana, stitchery, dance and sculpture will increase the effectiveness of the necessarily decreased time available for courses in physics, forensics, philosophy and the like? This hope assumes a facilitatory interaction between the two modes of ideation" (p. 30). The author concludes that "Such a mutually beneficial reinforcement seems a reasonable expectation." However, in this case, the action would be simultaneous and not consecutive; this brings us back to the aforementioned principle of integration, which Dr. Lozanov considers fundamental: "The artistic means used in suggestopaedia...are not an illustration in the learning process, rather they are integrated into the content of the program" (1973). But it was Bogen himself who opened the way when he wrote: "On the one hand, our belief that hemispheric specialization tends to be process specific rather than material specific suggests that subject matter may be less important than method of presentation." Luthe (1976) states: "Since the technical emphasis on right hemispheric nonverbal work in many instances constitutes a reversal of the habitual pattern of left hemispheric work, the CMT (Creativity Mobilization Technique) program may also help to indirectly enhance the functional relations between both hemispheres (i.e. interhemispheric connections)" (p. 7), and this view is supported by the findings of a number of researchers (Bogen, 1969; Dusewicz, 1968; Galin-Ornstein, 1973 and others). We might therefore consider that the musical presentation method used in suggestopaedia promotes the specific activity of each hemisphere; it also facilitates global activity, which is probably associative. As "memory is a set of heterogeneous mechanisms" (Lieury, 1975), participation by the two hemispheres would make it possible to achieve more associations.

It may be interesting to note that some teaching methods endeavor to create - specifically and sometimes artificially - multiple association.

Curran (1976), who has followed the line taken by Eccles (1966) and Goldstein (1963), tries to reconcile movement, color and sound: "Hence the more a particular spatiotemporal pattern of impulses is replaced in the cortex, the more effective becomes its synopsis relative to others" (Eccles, quoted by Curran, p. 79). Velvosky (1973) had already noted that the use of the musical, tonal and declamatory mandrin channelled information toward specific zones in the cortex and that the diversity of information transmission methods facilitated "the creation of engrams not only in clearly determined functional zones but also in their constellations, thereby forming supports for multiple ramifications in the memory structure" (p. 89). Gravilenko, Kireeva *et al* (1974) noted, on the one hand, the existence of unconscious hypermnesia produced by the part of the global message perceived through the subsensorial, intuitive and emotional channels. On the other hand, the need to avoid obsessive intellectualization caused by an overly reasoned assimilation of modes and structures, since the latter is a serious handicap to acquiring a language, as is overly intuitive memorization. By presenting the lesson content musically, both hemispheres are used since both voluntary and involuntary memorization are ensured (Balevski, 1976). The following statement by Fischer serves to illustrate the opposition and the link between purely rational and purely intuitive learning: "While a hemisphere-specific task is solved by the appropriate hemisphere, the activity of the other is repressed or inhibited. Moreover, Aristotelian logic and language may be interhemispherically integrated with Platonic imagery. But when levels of subcortical arousal are raised (as during creative, hyperphrenic, catatonic and ecstatic states) or become lowered (as in the hypo-aroused meditative states), there is a gradual shift of information processing from the Aristotelian to the Platonic (cortical) hemisphere." The same view is expressed, although differently, by Hecaen: "in fact...the real difference between the two hemispheres is a functional difference which reflects a different ability to process information" (1977, p. 243). "It is important to emphasize that what most characterizes the hemispheres is not that they are specialized to work with different types of material (the left with words and the right with spatial forms); rather, each hemisphere is specialized for a different cognitive style; the left for an analytic, logical mode for which words are an excellent tool, and the right for a holistic, gestalt mode, which happens to be particularly suitable for spatial relations" (Galin, 1976). As music creates the aforementioned specific state, it enables both hemispheres to use their own functional capacities. "A really fine and harmonious interplay between the two hemispheres can work perfectly in a succession rhythm: intuitional insight, interpretation, further insight and its interpretation, and so on" (Assagioli, 1971). Einstein spoke of "combinatory play". Suggestopaedia, and specifically the musical presentation of lessons, which combines two seemingly opposed aspects, is one of the first examples of a pedagogical method which takes into account the dual nature of the brain and no longer considers that the human mind functions as a unified whole. In this sense Lozanov might be compared with Lashley (1958), "an exceptional psychologist" (Bogen, 1964), who wished to recognize the duality of the brain in psychological matters. A further point should perhaps be made: "Through modern anatomical and physiological data, we can formulate the principle of the vertical structure of functional cerebral systems, according to which any form of behavior is ensured by the collective work of the various levels of the nervous system. The cerebral cortex is not the only substrate of the physical processes" (Balevski, 1976, p. 24). The existence of vertical links essential to the proper functioning of the brain has been shown. Through the ascending links between subcortical functions and the

cerebral cortex, the excitability threshold of nervous cells can be modified. In fact "recent anatomical and physiological studies partly explain the role in memory of the hippocampus, the nucleus amygdalae, mamillary bodies and other structures from this region" (Lieury, 1975, p. 224-225). This complex system of nuclei and channelling of nervous influxes can be considered a "true basic brain of behavior." The whole structure is linked to the centers of vigilance (reticular formation), emotional development (limbic circumvolution), cognitive development (frontal lobes). "It has been shown that these formations are of considerable importance in the formation of readiness in accordance with needs, the programming of acts, and in motivation, the emotions, etc" (Balevski, p. 25). Chauchard (1973) makes a similar point: "Man's associative zones are so developed that they go beyond the premotor frontal zone, thereby constituting a supplementary brain, the last stage in evolution. It is the complex circuits of the prefrontal brain which, if one has learned to use them, coordinate the emotional and the rational, thereby enabling man to attain his full capacity for responsibility and thought. We do not of course locate the higher psychological qualities - only the existence of coordinating circuits - in the prefrontal neurons. A process such as memory involves the participation of all three brains" (p. 39). Chauchard recognizes, moreover, that in practice man "does not use his brain to its full capacity," and that the two brains - the primitive emotional brain and the superior rational brain - are more often dissociated than associated.

It is possible, therefore, that music helps to create an emotional state which uses physiological channels to provoke a behavioral reaction. "It seems, in fact, that the centers in the regions deriving from the embryonic paleopallium (the primitive cortex), particularly the hippocampus region and its gyrus, contain the great emotional patterns" (Morin, 1974, p. 83). Emotional action may also affect this complex set of structures and may also be used for psychotherapeutic treatment (Renaud, 1975) as well as for a pedagogical "treatment" (Balevski, 1976). Balevski noted that when classical music is played "the theta waves expressing emotions increase slightly". Gabal and Jost (1972) used first a microplethysmograph and subsequently an electroencephalograph in their research and noted a drop in the level of vigilance and the appearance of "generalized sudden increases in theta rates" which gradually became longer. Simonov thought that an emotional state arising under the influence of the motivation system promotes the superior activity of the brain. Therefore, the emotions' experience may help a person to memorize better. All these hypotheses are of great interest since they may lead to research linking psychology and suggestopaedia, and clarifying the role of integrated music in the learning process. It also seems that a suggestopaedic approach answers the questions or criticism made by a number of researchers regarding the pedagogical use of the full capacity of the brain (Grady, 1976, Mintzberg, 1976), which Bogen (1975) expressed thus: "How can our teaching methods be improved for the immediate, effective encouragement of the right hemisphere?"

Musical Programs

The use of music is not, of course, in itself a valid criterion. "The search for other than left hemisphere values has not only provided the appearance of art in unfamiliar places, but has also produced a lot of kookiness from sources all too familiar" (Bogen, 1975). Not all music automatically produces the desired effect: "Music whose effect is really

vertically, like so many bars on a cage which the notes, marshmallows and lollipops gently drip or with which they clash like powerless and uncontrolled hammers. Music which sets your teeth on edge (and not only in the dentist's waiting room). Music which buzzes and leaves cavities-...gaps in your head, holes in your walls and locks in your ears. Music made to drain you of any resistance or desire. Music-pollution inherent in certain types of consumption. Does music temper one's habits? This type of music softens them." (*Perspectives*, 1977).

This vivid, scathing language reflects a discovery first make in ancient times and often repeated since then. Plato spoke of harmonies which are "plaintive, soft and suitable for banquets" (III, 398e) and Aristotle noted the following: "From earliest times there have been essential differences between musical modes, and thus listeners are affected in different ways and do not experience the same feelings toward each mode: some music, such as the mixolydian mode for example, is listened to in a serious and sad state of mind, while others such as relaxed modes, require a softer state of mind. It seems that only with the dorian mode is the soul plunged into a middle state and at its most stable, whereas the phyrygian mode makes the listener enthusiastic" (VIII. 5, 1340 a-b). Gaston (1968) drew attention to another aspect of the influence of music: "The music in supermarkets in checkout counters, the music and yells (chants) at athletic events, church music, dance music, and music in crowded elevators are examples of attempts to control behavior by music" (p. 19). Much has, of course, been written on the psychophysiological influences of music: Diserens (1926), Schoen (1927), Van de Wall (1936), to name only a few, are some of the writers of the last few decades. In *Actualite et Developpement de la Musicotherapie* (Guilhot-Jost, 1973), Lecourt makes a significant remark (p. 37): "When music is used as an environmental element conditioning human activity, as is the case with functional music and certain therapeutic applications, it is important that its power be controlled at the deontological, physical and psychological levels since, as Stockhausen pointed out (1971): "...You can act on a human being's "electrical" sensitivity through sound waves." If you simply broadcast a certain piece of music for twelve hours a day on the radio, one day, without knowing why, men will march and die for liberty on behalf of heaven knows what (p. 117).

At the Sofia Institute for Research in Suggestology the musical programs are, therefore, first presented to the students in a laboratory. The music is chosen not for its physical properties (Lozanov, 1977) but for its psychological, pedagogical and physiological effects. Checks are made to ascertain its positive effect on the morale of individuals and its ability to provide psychological relaxation, that is a state of pseudopassiveness accompanied by relaxation. Generally speaking, classical or preclassical music programs are found to be most successful in this respect. Contained below is an example of the musical program used in Sofia when presenting the ten leesons in a language course for beginners.

1) (A) Joseph Haydn, Symphony No. 67 in F major, and No. 69 in B major. (B) Archangelo Corelli, Concerti Grossi, op. 4, 10, 11, 12.

2) (A) Joseph Haydn, Concerto for Violin and String Orchestra, No. 1 in C major, and No. 2 in G major. (B) J.S. Bach, Symphony in C major, and Symphony in D major; J.S. Bach, Symphony in G minor, op. 6, No. 6; W.F. Bach, Symphony in D minor & C.P.E. Bach, Symphony No. 2 for String Orchestra.

3) (A) W.A. Mozart--Haffner Symphony, Prague Symphony, German Dances. (B) G. Handel, Concerto for Organ and Orchestra; J.S. Bach, Choral Prelude in A major, and Prelude and Fuge in G minor.

4) (A) W.A. Mozart, Concerto for Violin and Orchestra, Concert No.

7 in D major. (B) J.S. Bach, Fantasy in G major, Fantasy in C minor and Trio in D minor, Canonic Variations and Toccata.

5) (A) L.V. Beethoven, Concerto No. 5 in E flat major for Piano and Orchestra, op. 73. (B) Antonio Vivaldi, Five Concertos for Flute and Chamber Orchestra.

6) (A) L.V. Beethoven, Concerto for Violin and Orchestra in D major. (B) A. Corelli, Concerto Grosso, op. 6, No. 3, 8, 5, 9.

7) (A) P.I. Tchaikovsky, Concerto No. 1 in B flat minor for Piano and Orchestra. (B) G.F. Handel, The Water Music.

8) (A) J. Brahms, Concerto for Violin and Orchestra in D major, op. 77. (B) F. Couperin, Le Parnesse et l'Astree, Sonata in G minor; J.P. Rameau, Pieces de Clavecin No. 1, 5.

9) (A) F. Chopin, Waltzes. (B) G.F. Handel, Concerto Grosso, op. 3 No. 1, 2, 3, 5.

10) (A) W.A. Mozart, Concerto for Piano and Orchestra No. 18 in B flat major. (B) A. Vivaldi, The Four Seasons.

Effects

It is not always easy to determine the specific effects of music in the suggestopaedic approach. This is to be expected since the teaching system is based on gestalt principles, and therefore each element has a significance in relation to the other elements. A number of general findings have been quoted. Some research has shown that music has a particular effect on long-term memory: "The material obtained during the concert session is memorized for a longer period of time" (Lozanov, 1975, p. 249). However, music also appears to facilitate short-term memorization (Ganovski, 1975). Further research will have to be done in this area before more specific information can be offered. However, the hypotheses considered above undoubtedly explain this increase in memorization, which is a global result of the suggestopaedic approach.

We should also ask whether music has other beneficial effects in addition to its major contribution to memorization. As we have seen, experiments in psychotherapy have shown that music facilitates group relations and communication. This was one of the findings with groups learning a language through the suggestopaedic method. A group is created, becomes very strong and the members of the group communicate very easily. Communication is also established very easily with people outside the group. In contrast to what happens with normal methods, students learning through the suggestopaedic approach are neither afraid to speak nor do they fear the people speaking with them; rather they find that they feel very relaxed. Could music have anything to do with this? This point has not been ascertained as such. Obviously, these effects are not produced by the music alone. However, as part of a gestalt approach, it might help to produce these results, thereby confirming the findings of music therapy.

One other interesting point should be made, although the specific role of music has not been determined: the therapeutic effect of suggestopaedic courses. It has been found that suggestopaedia has a very beneficial effect on the intellectual capacity of students, even if they are suffering from neurotic problems (Lozanov, 1967a, 1971; Balevski, 1968, Lozanov, Balevski & Stomonyakov, 1973). Kolarova (1973a) found that suggestopaedia had a beneficial effect on hysterical or neurasthenic neuroses. "Particularly, 'the so-called concert pseudopassiveness' (G. Lozanov), associated with the ritual of the session, the feeling of freshness and the rest at the end of the lesson have a psychotherapeutical

effect on all the persons observed. Music also has an uninhibiting, relaxing, appeasing effect on this background for many persons" (Kolarova, 1973a, p. 383).

Hence the idea of using suggestopaedia as a therapeutic method (Kolarova, 1973a; Kolarova, Balevski, 1973; Kolarova, Sharankov, 1975). "the effect of the course on persons with neuroses was typical of a successful course of psychotherapy, namely, the disappearance of a headache, irritability and depression, and the appearance of a good appetite, sound sleep and cheerful self-confidence" (p. 18). In the same paper, Velvovsky specifically stresses the importance of music: "In the method created by G. Lozanov (we are very much tempted to say - in the system of psychohygienopaedia), the musical passages do not block the reception of the information and have an enormous invigorative effect" (p. 20).

Conclusion

As can be seen from these few pages, the systematic introduction of music into pedagogy is undoubtedly an innovation with numerous benefical results. More research remains to be done and more hypotheses to be checked. "The results of the suggestopaedic learning process transcend the mere acquisition of new knowledge. The suggestopaedic approach focuses on the whole person and thus contributes to his complete development. Not only can psychological or pschosomatic problems be resolved (headaches, stomach cramps, anxiety, aggression and other complaints have been found to disappear); but the student's personality is seen to develop (he becomes more self-assured, more creative and expresses himself more easily). Moreover, we are obviously only at the initial stage of a promising program. With greater knowledge of suggestological theories, more experiments and better dissemination of information, the beneficial effects and humanistic influence of a suggestopaedic education will increase" (Racle, 1977c, p. 9). "Science may in the future find a way of using musical stimuli more radically so as to activate man's creative resources" (Leonidov, 1965). We can be sure that music still has many surprises in store for us.

References

Altshuler, I.M. The past, present and future of music therapy. In E. Podolsky, (Ed.), *Music Therapy* . New York: Philosophical Library, 1954.

Aristotle, *Politics* .

Assagioli, R. Psychosynthesis: *A manual of principles and techniques* . New York: Hobbs, Dorman and Co., 1971.

Balevski, P. Rabotosposobnostta i zdrauoslovnoto sestoyanie na izutchavachite tchujd ezik po suggetopeditchna metodika. *Narodna Prosveta* , 1968, *5* , 100-103.

Balevski, P. EEG changes in the process of memorization under ordinary and suggestive conditions. *Suggestology and Suggestopaedia* , 1975, *1* (1), 26-35.

Balevski, P. A szuggestopediai tanulmanyi rendzer fiziologiai es

pszichologiai alapjai. In *A szuggestopediai modszerrel forteno nyelvtanulas nehany kerdese*. Budapest, Hungary: M.E.T.E.Z., 1976, 15-31.

Balevski, P. Fiziologichni i psykhoigienni osnovi na sugestopediyata. *Psikhologiya*, 1977, *6*, 79-88.

Barrett, B.H. Reduction in rate of multiple ties by free-operant conditioning methods. In *Case studies in Behavior Modification*. New York: Holt, Rinehart and Winston, 1965, 255-263.

Benitez-Bordon, R.A. and Schuster, D.H. Foreign language learning via the Lozanov method: Pilot studies. *The Journal of Suggestive-Accelerative Learning and Teaching*, 1976, *1*, 3-15.

Bogen, J.E. The other side of the brain: An oppositional mind. *Bulletin of Los Angeles Neurological Societies*, 1969, *34*, 135-162.

Bogen, J.E. Some educational aspects of hemispheric specialization. *U.C.L.A. Educator*, 1975(Spring), *17* (2), 24-32.

Bogen, J.E. Foreword to: D. Friend, *Composition: a painter's guide to basic problems and solutions*. New York: Watson-Guptill, 1975.

Bogen, J.E. & Bogen, G.M. The other side of the brain: III. The corpus callosum and creativity. *Bulletin of Los Angeles Neurological Societies*, 1969, *34*, 191-220.

Bower, G.H. Analysis of a mnemonic device. *American Scientist*, 1970, *58*, 496-510.

Chauchard, P. Ou en est la carte du cerveau? *Psychologie*, 1973, 31-39.

Chauchard, P. *Hypnose et suggestion*. Paris: P.U.F., 1974.

Chauchard, P. Inhibition cerebrale et vigilance. In *Compte-rendu du premier congres mondial d'hypnopedie et de suggesto-hypnopedie*. Paris: I.I.R.A.H., 1976, 9-13.

Contenau, D. *La medecine en Assyrie et en Babylonie*. Paris: 1939.

Curran, Ch.A. *Counseling-learning in second language*. Apple River: Apple River Press, 1976.

Deglin, V.L. Our split brain. *The UNESCO Courier*, 1976, *29*, January, 4-32.

Diserens, Ch.M. *The Influence of music on behavior*. Princeton: University Press, 1926.

Dupre, E. & Nathan, M. *Le langage musical, etude medico-psychologique*. Paris: Alcan, 1911.

Dusewicz, R.A. Lateral dominance and creativeness. *Perceptual Motor Skills*, 1968, *27*.

Eccles, J.C. Conscious experience and memory. In J. Eccles (Ed.), *Brain and conscious experience*, New York: Springer-Verlag, 1966.

Evans, F.J. L'effet placebo. *Psychologie*, 1974, *55*, 15-17.

Fisher, R. Hallucinations can reveal creative imagination. *Fields within fields*, 1974(Spring), *11*, 29-33.

Gabai, M. and Jost, J. *Detente psycho-musicale en odonto-stomatologie.*. Paris: Maloine, 1972.

Galin, D. *Duality of the brain: Implications for education*. Berkeley: University of California, 1976.

Galin, D. & Ornstein, R.E. Hemispheric specialization and the duality of consciousness. In W. Harvey (Ed.), *Human behavior and brain function*. Springfield: C.C. Thomas, 1973.

Galinska, E. La musicotherapie recepuve de groupe dans le traitement complexe des nevroses. *La vie medicale au Canada francais*, 1976, *5*, 1040-1046.

Galloway, H.E. A comprehensive bibliography of music referential to communicative development, processing, disorders and remediation. *The Journal of Music Therapy*, 1975, *12*, 164-196.

Ganovski, L. The effect of some of the means of suggestion on the volume of short-term memory. *Suggestology and Suggestopaedia* , 1975, *1* (2), 48-51.

Gaston, E.T. Man and music. In E.T. Gaston, (Ed.), *Music in therapy* . New York: Macmillan, 1968, 7-29.

Goldstein, K. *The organism* . Boston: Beacon Press, 1963.

Grady, M. Students need media for a balanced brain. *Audio-visual Instructor* , 1976(Nov.), *21* , 46-48.

Gravilenko, N.G., Kireeva, A.P., *et al* . Sdementy suggestopedii i voprosy intensivnogo obutcheniya spetzialistov innostrannym iazykam. In *Intensivnie metody obutchenia inostrannym iazykam* . Moskva: Institut Moris Torez, 1974, 26-29.

Guilhot, J., Guilhot, M.A. & Jost, J. *Musique, psychologie et psychotherapie* . Paris: E.S.F., 1964.

Guilhot, J., Guilhot, M.A., Jost, J. & Lecourt, E. *La musicotherapie et les methodes nouvelles d'association des techniques* . Paris: E.S.F., 1973.

Hanser, S.B. *The effect of contingent music on the behavior of a group of junior high school students* . Florida State University, 1972.

Hecaen, H. La dominance cerebrale. *La Recherche* , 1977(Mars), *76* , 238-244.

Kohut, H. Observations on the psychological functions of music. *Journal of American Psychosomatic Association* , 1957, *5* , 389-407.

Kolarova, D. The effect of suggestopaedic foreign language instruction on the course of neuroses. In *Problemi na Suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 377-384.

Kolarova, D. Sravnitelno proutchvane verkhu letchebnite vezmojnosti na tempidova. *III-ta natzionalna conferentziya po farmakologiya i klinika na novi lekarstveni sredstva* . Sofia, 1973.

Kolarova, D. & Balevski, P. Obrajenie suggestopeditcheskogo obutcheniya inostrannym iazykam na funktzionalnoe sostoyanie bolnykh nevrozami. In *Problemi na Suggestologiyata* , Sofia: Nauka i Iskustvo, 1973, 127-[illegible].

Kolarova, D., Sharankov, E., Karashev, G. & Buchvarova, E. Scologeny in students and the suggestopaedic process of instruction. *Suggestology and Suggestopaedia* , 1975, *1* (2), 14-21.

Kuhner, A. Hypnosis without hypnosis. *The International Journal of Clinical and Experimental Hypnosis* , 1963, *10* , 93-99.

Lashley, K.S. Cerebral organization and behavior. *Research Publications of the Association for Research on Nervous and Mental Disorders* , 1958, *36* , 1-18.

Lehman, D. O roli musikii v suggestologiya. In *Problemi na suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 264-267.

Leonidov, L. Rezervy Homo Sapiens. *Smyena* , 1965, *20* .

Leroy, Cl., Dars, E., Jost, J. *et al* . Relations therapeutiques multiples dans l'application des methodes d'expression. *Annales de Psychotherapie* , 1973, *6* , 20-36.

Lieury, A. *La memoire* . Bruxelles: Dessart et Mardaga, 1975.

Lozanov, G. Suggestopediya i psikhoterapia. *Zdraven Front* , 1967, *3* , January 21.

Lozanov, G. Integral Psychotherapy. *Acta Medica Psychosomatica* . Roma, 1967.

Lozanov, G. *Suggestologiyata* . Sofia: Nauka i Iskustvo, 1971.

Lozanov, G. Osnovi na suggestologiyata. In *Problemi na suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 39-54.

Lozanov, G. Roli contzertnogo scansa v strukture uchebnogo protzessa pri suggestopedicheskom obutchenii inostrannym iazykam. In

Intensivnie metody obutchenia inostrannym iazykam . Moskva: Institute Moris Torez, 1974, 72-74.

Lozanov, G. A general theory of suggestion in the communications process and the activation of the total reserves of the learner's personality. *Suggestopaedia-Canada* , 1977, *2* (1), 1-4.

Lozanov, G., Balevski, P. & Stomonyakov, V. Umstvennaya rabotosposbnost i bioelektritcheskaya aktivnost mozga pri suggestivnom obutchenii. *Pervi kongress na drujestvoto po fiziologuitchni nauki* . Sofia, 1973, 10-14.

Lozanov, G., Balevski, P. & Stomonyakov, V. Otrajenie utchebnykh zaniatii po suggestoneditcheskoy metodike na bioelektritcheskuyu deyatelnosti golobnogo mozga u kursistov i prepodaveteley. In *Problemi na suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 515-520.

Lozanov, G. & Novakov, A. Suggestopeditcheskaya metodika pri obutchenii inostrannym iazykam. In *Problemi na suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 127-135.

Lozanov, G., Markley, O. & Racle, G. *et al* . Round Table on suggestopaedia. In *A teaching experience with the suggestopaedic method* . Ottawa: Public Service Commission, 1975, 277-298.

Machabey. *La musique et le medecin* . Paris: Masse, 1951.

Madsen, C.K., Dorow, L., Moore, R.S. & Womble, J. Effect of music via television as reinforcement for correct mathematics. *Journal of Research in Music Education* , 1976, *24* , 51-59.

Madsen, C.K., Forsythe, J.L. Effect of contingent music listening on increases of mathematical responses. *Journal of Research in Music Education* , 1973, *21* , 1976-181.

Madsen, C.K. and Madsen, C.H. Selection of music listening or candy as a function of contingent versus noncontingent reinforcement and scale singing. *The Journal of Music Therapy* , 1972, *9* , 190-198.

Madsen, C.K., Moore, R.S., Wagner, J.M. & Yarbrough, C. A comparison of music reinforcement for correct mathematical responses versus music as reinforcement for attentiveness. *The Journal of Music Therapy* , 1975, *12* , 84-95.

Markoff, A. *La musique, les musiciens, la fonction musicale. Essai therapeutique, anthropologique, anatomo-clinique* . Paris: Maloine, 1938.

Miller, D.M. *Effects of selected music listening contingencies on arithmetic performance and music preference of educable mentally retarded children* . Columbia University, 1974.

Miller, D.M., Dorow, L. & Greer, R.D. The contingent use of music and art for improving arithmetic scores. *The Journal of Music Therapy* , 1974, *11* , 57-64.

Mintzberg, H. Planning on the left side and managing on the right. *Harvard Business Review* , 1976, July-August, 49-58.

Morin, G. *Le champ cerebral* . Paris: E.S.F., 1974.

Noncheva, R. Changes in the capacity of work in students learning various school subjects in the suggestopaedic method. In *Problemi na Suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 529-532.

Noncheva, R. Vozrastniie osobennost EEG pri telemetritcheskoy registratzni v khode suggestopeditcheskogo obutcheniya. In *Problemi na Suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 523-526.

Petrelevicius, E.P. *New explorations in mind and learning* . Philadelphia: Dorrance & Company, 1975.

Plato. *The Republic* .

Puntchev, S. Vliyanie avtoriteta i "contzertnoy psevdopassivnosti" na obem neposredovennogo zapominaniya u utchachtikhsya srednikh chkol. In *Problemi na Suggestologiyata* . Sofia: Nauka i Iskustvo, 1973, 540-545.

Rabcsak, M. Results of the first suggestopaedic instruction in a foreign language course in Hungary. *Suggestology and Suggestopaedia*, 1975, *1* (3), 33-39.

Racle, G. Introduction to suggestopaedia. In G. Racle (Ed.), *A Teaching experience with the suggestopaedic method*. Ottawa: Public Service Commission, 1975, 213-224.

Racle, G. Apprentissage langagier et facteurs suggestopediques. *Revue de Phonetique Appliquee*, 1977, 42-43, 194-213.

Racle, G. Practical developments and theoretical concepts of suggestopaedia in language teaching in Canada. *The Journal of Suggestive-Accelerative Learning and Teaching*, 1977, *2*.

Racle, G. A new development in education. *Training 77*, 1977, March, 7-9.

Renaud, J. Psychotherapies. In *Le Cerveau et la pensee*. Science et Vie, H.S., 1976.

Ruiz, C. & Pilon, W. Therapie de groupe: musicotherapie et ergotherapie controlees dans un milieu psychiatrique. *Laval Medical*, 1969, *40*, 189-197.

Schoen, M. (Ed.) *The effects of music*. New York: Harcourt, Brice and Co., 1927.

Schuster, D.H. A preliminary evaluation of the suggestive-accelerative Lozanov method in teaching beginning Spanish. *The Journal of Suggestive-Accelerative Learning and Teaching*, 1976, *1*, 41-47.

Scott, C. *La musique: son influence a travers les ages*. Neufchatel: La Baconniere, 1960.

Skinner, B.F. *Beyond freedom and dignity*. New York: Alfred Knopf, 1921.

Stockhausen, K. Interviewa. *VHIOI*, 1971, *4*, 110-118.

Talone, J.M., Steadman, C. & Diamond, M.J. *The use of music and silence to increase hypnotic susceptibility*. Paper presented at annual meeting of Hawaii Psychological Association, 1973.

Tashev, T. & Natan, T. Suggestion to aid teachers and doctors. *Bulgaria Today*, 1966, *9*, 24-27.

Van de Wall, W. *Music in institutions*. New York: Russell Sage Foundation, 1936.

Van de Wall, W. *Music in hospitals*. New York: Russell Sage Foundation, 1946.

Velvovsky, I.Z. Belgarskiyat sugestopeditchen metod kato metod na psikhokligienopediyata. In *Problemi na suggestologiyata*. Sofia: Nauka i Iskustvo, 1973, 88-91.

Velvovsky, I.Z. The ideas of method of G. Lozanov in the eyes of the psychotherapeutist-psychohygienist. *Suggestology and Suggestopaedia*, 1975, *1* (1), 16-21.

Zack, M. *The effect of music on drawing*. University of Kansas, 1951.

Cette musique qui ramollit les coeurs. *Perspectives*, 1977(mai), *5*, 6-14.

Suggestology without myth. *Sofia News*. 1974, March, P. 1.

La musique et la pédagogie: la Suggestopédie

La contribution de la musique dans la pédagogie et la réussite des études est admise depuis longtemps. Cependant, à notre connaissance, la Suggestopédie est la seule approche pédagogique employant la musique comme élément constituant du processus d'enseignement. La musique contribue à créer une ambiance agréable et suggestive dans un cours suggestopédique ce qui permet à l'étudiant de surmonter des obstacles psychologiques anti-suggestifs et de réduire leur impact. La musique aide à engendrer un état réceptif induit par un état apparent de passivité. Cette pseudo-passivité

permet à la fois la création d'un état de relaxation psychologique et de concentration profonde caractérisé par une activité cérébrale de qualité supérieure et intense. Les effets positifs de la musique ont souvent été démontrés dans les recherches et expériences. Il est donc possible de proposer plusieurs hypothèses différentes pour expliquer le rôle de la musique dans la Suggestopédie. Toutes ces hypothèses sont d'un grand intérêt parce qu'elles peuvent conduire aux recherches qui lient la psychologie à la Suggestopédie (aussi bien que la physiologie à la Suggestopédie) et clarifier le rôle de la musique dans le processus d'apprentissage. Il semble aussi que l'approche suggestopédique réponde aux questions et aux critiques de nombre chercheurs concernant l'utilisation pédagogique de la pleine capacité du cerveau. Cependant il n'est pas encore facile de déterminer les effets spécifiques de la musique dans l'approche suggestopédique. Cela se produira puisque ce système d'enseignement est fondé sur des principes de Gestalt et ainsi chaque facteur prend un sens en relation avec les autres. Des recherches devront être poursuivies dans ce domaine avant que des renseignements plus précis puissent être présentés. Toutefois l'introduction systématique de la musique dans la pédagogie est indubitablement une innovation aux nombreux résultats bénéfiques.

Musik, Pädagogik, Therapie
Der Beitrag von Musik zu der Pädagogik und dem erfolgreichen Lernen ist seit langem erkannt worden. Aber Suggestopädie ist nach bestem Wissen die einzige pädagogische Methode, die Musik als einen Bestandteil des Lehrprozesses verwendet. Musik ist sehr wichtig in dem suggestopädischen Kurs, um die angenehme, suggestive Atmosphäre zu schaffen, dadurch wird es ermöglicht, die antisuggestiven Barrieren zu überwinden oder ihren EinfluB zu vermindern. Musik hilft einen Zustand der Aufnahmefähigkeit zu schaffen, die durch einen anscheinend Passivitätszustand herbeigeführt wird. Diese Pseudopassivität läBt einen Zustand der psychologischen Entspannung und hoher Konzentration mit intensiver, höherer Gehirntätigkeit entstehen. Die positiven Einwirkungen der Musik sind schon oft durch Forschung und Experimente gezeigt worden. Es ist darum möglich, verschiedene Hypothesen vorzuschlagen, die die Rolle der Musik in Suggestopädie erklären. All diese Hypothesen sind von groBem Interesse, da sie zur Forschung führen können, welche Psychologie und Suggestopädie (so wie Physiologie und Suggestopädie) verbinden und die Rolle von integrierter Musik im Lernprozess erklären könnten. Es scheint auch, daB eine suggestopädische Methode die Fragen bzw. die Kritik von manchen Forschern über die pädagogische Ausnützung der ganzen Gehirnskapazität beantwortet. Aber es ist noch nicht leicht, die spezielle Wirkung der Musik in einer suggestopädischen Methode zu bestimmen. Das ist zu erwarten, da diese Methode auf Gestaltprinzipien gebaut wird, und daher hat jedes Element eine Bedeutung in Bezug auf die anderen Elemente. Weitere Forschung muB in diesem Bereich getrieben werden, bevor ausführlichere Information angeboten werden kann. Aber die systematische Einführung der Musik in die Pädagogik ist sicher eine Neuerung, welche zahlreiche, vorteilhafte Ergebnisse bringt.

La música y pedagogía: Sugestopedía
La contribución de música a pedagogía y al aprender que sale bien ya se ha reconocido. Como quiera que sea al mejor de nuestro saber, sugestopedía es el solo acceso pedagógico usando música como componente esencial del proceso docente. La música hace un gran papel en un curso sugestopédico en creando una agradable, sugestive atmosfera con eso haciéndolo posible superar las contra-sugestivas barreras psicológicas o reducir su impacto. La música ayuda crear un estado de receptividad que se induce por un cierto estado de pasibilidad. Esta seudo-pasibi-

lidad permite la creación de un estado ambos de aflojamiento psicológico y alta concentración que envuelve intensa superior actividad cerebral. Los efectos positivos de música se han mostrado frecuentemente por investigacion e ensayos. Así es posible proponer un numero de diferentes hipoteses para explicar el papel de música en Sugestopedía. Todas estas hipoteses son de gran interés desde que ellas guien a investigación enlazando psicología y Sugestopedía (y también fisiología y Sugestopedía) y clarificando el papel de música integrada en el proceso de aprender. Se parece también que un acceso sugestopédico contesta las cuestiones o críticas hechas por unos investigadores sobre el uso pedagógico de la capacidad llena del seso. A lo menos no es fácil todavía determinar los efectos específicos de música en un acceso sugestopédico. Esto debe esperarse a causa de este sistema de enseñar que se basa en principios gestaltos y por eso cada elemente tiene una significación en relación a los otros elementos. Adicional investigación se necesitará en esta área antes de que mas específica información se ofresa. Pero la introducción sistemática de música en la pedagogía es sin duda una innovación con numerosas resultas provechosas.

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Suggestopedia in Budapest: Around a Language in 50 Days

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Abstract

This is an article about the writer's visit to Budapest, Hungary and also his visits to a few suggestopedia classes. Examples are given from the various suggestopedia lessons that are taught to the participating students.

We do not doubt that we...have made errors. But through our own experience we have become firmly convinced that there is no error about the main point — the right to existence of the science of suggestology...We are far from saying that we can supply the ultimate answers to all the problems. We have only taken one of the possible roads to revealing a small part of man's possibilities...Georgi Lozanov (1978, p. 11).

Early in 1979, I received an invitation to visit suggestopedia classes in Hungary. The letter was sent by the director of the Hungarian Scientific and Technical Societies, whose office is one of the locations in Budapest where foreign languages are taught with suggestopedic methods.

When I arrived in Budapest in May, I was met by an official car which took me to my hotel and then to the offices of the Hungarian Societies. One of the instructors, Alexander Jarovinsky, introduced me to the teaching staff who had gathered to meet me and to discuss the direction that suggestopedia has taken in Hungary. I discovered that foreign language classes are sponsored by the Hungarian Scientific and Technical Societies, by the Ministry of Culture, and by the Technical University. I had heard a report by Kathy Pillar in 1978 describing the work she and her colleagues were doing at the Technical University. In the next few days, I had the opportunity to visit classes arranged by the other two organizations.

An Imaginary Conference

The Hungarian Societies' staff members offer courses in English, Spanish, German, and Russian. (Four to eight years of Russian are required in all the public schools, but students who enroll for the suggestopedic course are typically unable to converse in the language.) There will be an introductory course of five weeks followed by a secondary

course which also lasts for five weeks. Students must meet for four hours each day, five days a week. When I visited the English course, I learned the students were completing the final week of the secondary course. I was given the lesson plans for both courses and observed that they often centered around an imaginary conference held in London. For example, early in the course, the students role-play the process of checking into the hotel:

Peter: Excuse me, madam. Aren't you Linda King, the singer?

Linda: Yes, I am a singer. Are you a delegate too?

Peter: Yes, I am. My name is Peter Reeves. How do you do? Happy to meet you.

Linda: How do you do? Glad to meet you. Where are you from, Mr. Reeves?

Peter: I am from Leeds.

Linda: What is your job?

Peter: I am an engineer in a factory. A brief lesson on the verb "to be" followed, contrasting the positive form (e.g., "I am happy," "You are on the list," "He is in London") to the negative form (e.g., "She is not from Boston," "We are not neighbors," "They are not delegates."). This lesson takes two or three class sessions to complete as do the other lessons.

Lesson two took place on the second day of the imaginary conference. The delegates have a lively conversation during the refreshment break.

Allan: Hello everybody. Oh, photos] You miss your families. I am still a bachelor and I only have a mother and a father.

Irene: Do you have any brothers or sisters?

Allen: I have no brothers and no sisters. I also have no wives. I am a lucky fellow.

The grammar exercises centered on the verb "to have" in its positive form (e.g., "We have a lot of friends"),; its negative form (e.g., "We haven't many photos"); and the interrogative form (e.g., "Have we many friends?").

By the third day of the conference, some of the delegates had found a supermarket and had been invited to Upton's home.

Upton: Will you have some gin?

Robert: Alcohol is our enemy.

Upton: They say we must love our enemies.

Robert: Yes, but not swallow them.

The fourth lesson involved sight seeing; by this time, the grammar lessons had moved to comparison of adjectives ("better," "best", "worse," "worst," etc.).

In the fifth lesson Robert and Arthur were trying to cheer up Linda:

Robert: Linda, don't always look on the black side of things. Do you know the difference between a pessimist and an optimist?

Arthur: The optimist says, "The bottle is half full." The pessimist says, "It's half empty."

One of the instructors brought this lesson to my attention when we were touring Buda, the city that united with Pest in the nineteenth century to form Budapest. Right in the middle of an historic collection of stately buildings, which were centuries old, a Hilton Hotel had been constructed. The instructor asked for my opinion, stating that many of her friends considered it a monstrosity. I observed that the building architect had tried to keep the design simple and had matched the color to the surroundings. I replied, "Well, it could be worse." The instructor remarked, "You are like the optimist who sees the bottle as half full."

Lesson six of the introductory course contained episodes concerning a soccer match, a performance of "Hamlet," and an attempt at letter-

writing. This would give class members a chance to write their own letters and to share their experiences with sports and the theater — in the context of the imaginary conference.

By the days seven, eight, and nine, it appeared as if the delegates were spending more time sightseeing and socializing than in attending conference meetings. After dinner, Allan could not find his wallet:

Allan: What shall I do now? I have left my money behind. I will have to borrow some money to pay the bill.

Paul: Sorry, I am broke. I cannot lend you a penny.

Waiter: Here is the bill, sir. And a letter for you.

Allan: The letter reads, "Cheer up. We will never leave you in a tight corner."

Friends: (They return the wallet which they have hidden. They reveal the trick and burst out laughing.)

Allan: A friend in need is a friend indeed. Was that the idea?

Lesson ten concluded with the delegates at the airport making their farewells.

The grammar has advanced to the use of relative pronouns (e.g., "who," "whom," "whose"), and the use of the simple future tense (e.g., "Our dreams will come true tomorrow"), present continuous tense (e.g., "I'm going window shopping"), and the interrogative tense (e.g., "When does he start?"). I was told that the final class session usually consisted of an extended dramatization in which class members had the opportunity to converse spontaneously with each other, pulling together all the language skills they had learned over the past sessions. The lesson materials included songs (such as "Auld Land Syne" and "Home on the Range"), jokes, and information about the countries using the language that had been studied.

The new material was presented on alternate days, using the typical suggestopedic methods. To produce a relaxing effect, the slow movements of Baroque music were used. This type of classical music has a steady beat of about one beat per second, sixty per minute. Typical selections used included the Bach and Telemann flute concertos, and Handel's and Vivaldi's largo movements from their symphonies and concertos. The tempo of a recording can be checked out against a clock with a second hand to be sure it is about 60 beats per minute (Ostrander and Schroeder, 1979). The educators at Karl Marx University in Leipzig, East Germany have observed that the best Baroque selections for suggestopedia feature string instruments and have a slow, constant rhythm. The melodic structure is not distracting and the harmonic patterns are based on specific ratios.

For best results, the material to be learned is presented in an eight-to-ten second rhythm. Sometimes a follow-up session is made with romantic classical music and emotionally-toned presentations by the instructor.

I was familiar with a hypnotic procedure developed by Linn Cooper and Milton Erickson (1959) which used rhythm. They set a metronome at 60 beats per minute and used 10-second activity cycles. The hypnotized subjects listened to the metronome click and experienced the beats as being slower than clock time. As a result, time seemed to expand. One subject was a fashion designer. After 10 seconds she was asked:

Hypnotist: How long did it seem that you were working?

Designer: Maybe an hour...

Hypnotist: What did you do?

Designer: ...First I thought about pleats...I was sitting in an easy chair at home. I don't usually use pencil and paper. After I have the dress in mind, I may draw it....

Hypnotist: Were you pleased with the dress?

Designer: Yes.

Lozanov's innovation has been to use this rhythmic method together with music and without inducing hypnosis.

Under the London Subways

The class session which I visited was held in the offices of the Hungarian Scientific and Technical Societies. A dozen students were seated in a circle; I immediately observed how comfortable the chairs appeared and how suitable they would be for the "concert" sessions. Maps of the English-speaking countries festooned the walls of the classroom; also in view were other appropriate materials including a map of the London subway system.

The class members, as well as the instructor, Peter Hargitai, were dressed informally, many of them wearing sandals and blue jeans. There were equal numbers of men and women; all appeared to be in their late 20's or in their 30's. I was told that most of them were taking the course for professional reasons, but that a few were enrolled because of personal interest; all appeared highly motivated. A majority of class members were engineers; in addition, there were a few people involved in management, as well as one psychologist. I was told that the company allows the students to take time off for these courses and usually pays the two hundred dollar per-course fee.

However, their actual professions — and names — are disregarded during their classes in suggestopedia. The students took on the identities suggested by the teaching manual: Allan Black (a Canadian actor), Daisy Grey (an American playwright), Paul Norman (an Australian reporter), Linda King (a British singer), Robert Fox (a British physician), Irene O'Brien (an Irish writer), and Roland Roma (a British sociologist). The class added a few characters of their own including Charley the chess champion; all of these individuals purportedly had met in London at the international conference.

Indeed, on the day of my visit, the conference had ended and each class member offered a toast from an empty glass. (One of the students produced a bottle of wine but Hargitai gave the instructions to "smell but not drink," showing some reluctance to alter the consciousness of the class too profoundly.) Each toast was unique and many of them used idioms:

"Dear friends: The time has flown. The congress was very useful. I hope everyone will be very successful."

"The festival was very interesting and useful. I hope we shall met again." (At the prompting of the instructor, "met" was changed to "meet.") "A friend in need is a friend indeed."

"I'm very sad today to leave you. Charley was the hero of the day. Last but not least, let me thank my teacher."

One of the class members was asked to name the student who offered the best toast. He designated Shirley who was given some Hungarian candy as a prize. These frequent rewards were made in the spirit of fun rather than as serious competition, but they did serve the purpose of stimulating evaluation by one's fellow students.

The use of idioms was further rehearsed as students were asked how they felt. Each class member attempted to make a response not used previously; one student was "as fresh as a daisy," while another was "as fit as a fiddle." The weather was discussed; original remarks were again requested.

Every half hour or so, Hargitai the instructor would direct the class-members' attention to their song sheets and would turn on his tape-

recorder. The group would sing "A Hundred Miles," "My Darlin' Clementine," or some other set of lyrics. I observed that Hargitai was supplied with a great variety of unusual materials as well as books and magazines printed in English. (*Time* and *Newsweek* were available at certain newsstands when I was in Budapest, a significant change from my previous visit in 1973.)

The next exercise involved activities at the airport as the "conference" participants began to leave London. Typical phrases and sentences were put to use that had been introduced in the previous day's "concert" session. The class of ten was divided into pairs to practice the material relating to flight arrangments. I was told that this maneuver was one of the original facets of Lozanov's foreign language instructional method. However, a few months earlier when the Bulgarian teachers came to Budapest to give the Hungarian instructors an updated training course, they placed more stress on individual monologues. The modification was a controversial one among the Hungarian teachers as it took time away from the practice in pairs which allowed each student to use the new language more frequently in a social situation.

Suggestopedic English

This was one of the issues I had discussed at some length with the instructors in Budapest. They were a talented group, consisting of psychologists, linguists, teachers, and members of other professional groups. Most of them had other full-time jobs but taught one or two suggestopedic courses to supplement their income and to further their own knowledge about the process of language instruction.

The instructors agreed that the main concern of the students was to have a practical working knowledge of the foreign language. They agreed that their courses should be conducted in a spirit of excitement and good humor. However, some of them had observed that the course materials were not complex enough for their students, many of whom would be using the new language for conversations with individuals who preferred to discuss abstract matters, theories, and ideas. The social situations in the text were often sentimental instead of intellectual; the English used was somewhat old-fashioned and stilted. This led many instructors to supplement the text with current idioms, slang expressions, and jokes. One that I heard discussed in the class concerned an American visitor to London:

Englishman: This is the National Gallery, one of our largest museums.

American: Well, we have restaurants in America larger than that.

Englishman: And this is a statue of Prince Albert, Queen Victoria's husband.

American: We have statues of football players bigger than that.

(There is a break in the conversation as a fire engine raced down the street.)

American: That's a pretty big vehicle. What is it?

Englishman: (Exasperated). Oh, that's just a window-cleaner who is late to work.

Another point of contention was the use of body language. One instructor had the students on their feet much of the time so that they would be encouraged to use gestures. I remarked that much of the meaning in a verbal communication is carried by non-verbal elements such as facial expressions, tone of voice, and bodily movement. There also were different opinions on whether mistakes should be corrected immediately or later, whether the speaking of Hungarian should ever be

permitted in the class, and how much of the time should be taken by the instructor's comments.

One of the greatest concerns of some instructors was that their students might be obtaining too superficial a knowledge of the new language. One of them said that "Suggestopedic English" would not enable the students to do well at a professional congress; as a result a special "conference course" was sometimes taught for this purpose. But the opinion was also voiced that the potential was present to teach more thoroughly if the students were willing to work hard enough.

Another teacher surmised that suggestopedia teaches "around" the language rather than "through" it. The linguistic nature of a language is not adequately taught, grammar is given insufficient attention, and spelling is virtually ignored. Conversational vocabulary is given primary attention with grammar emerging from it in a rather informal way. As a result, suggestopedic courses do not prepare several students to take the state examination which emphasizes knowledge of the language's structure.

I was sympathetic to these concerns because of my familiarity with the ongoing controversy in the area of reading instruction in America (Krippner, 1967). For several decades, the "synthetic" school has emphasized the learning of speech sounds and the letters to which they usually correspond. The child then learns how to combine these sounds and letters into words and, later, into sentences. The "analytic" school takes a different approach, encouraging the memorization of the mastery of sentences, whole words, and only later helping the child to analyze the components of these larger units. The latter procedure was defended on the basis of enhanced pupil interest and motivation. However, most of the research tends to support the effectiveness of the "synthetic" approach, or an eclectic method that utilizes the best of both approaches (Chall, 1978).

I had inquired as to the possibility of a more systematic introduction of a language's structural elements into the course through suggestopedia. I recalled that the children in Sofia learned grammar through suggestopedia and there was nothing about a language's structure that would make it impossible to teach through Lozanov's approach.

In the meantime, it was advised that the suggestopedia courses be clearly identified as useful only for conversational English, French, German, or Russian. In this way, the courses would not be seen as competitive with the more traditional courses which prepared the students for the state language examinations.

Holograms in the Brain

We also discussed matters of a more theoretical nature. Some of the instructors had read Karl Pribram's (1974) important book *Languages of the Brain* in its Russian translation. I observed that I had met Pribram at several conferences and was both impressed and intrigued by his work.

Other researchers have observed that memory is a result of biochemical changes in the brain; it is stored in individual cells and is recalled when activated by the electrochemical activity of nerve cells. However, traces of the same memory have been shown to exist in more than one area of the brain. Further, when one area is damaged, another area often appears to take over and memory is not severely impaired (Goleman, 1979).

Pribram suggests that neurological data indicate the brain often works in a manner resembling the mathematical transformation that

occurs when a three-dimensional image is projected into space in holography. Laser beams consist of rays of focused monochromatic (i.e., having only one frequency) light. (Ordinary light consists of diffused unfocused light rays of many different frequencies). In holography, two laser beams are utilized — one, the "reference" beam, is focused on a photographic plate, while another beam of the same frequency is reflected off an object, such as a vase, and then strikes the photographic plate. The two beams form an "interference pattern" on the plate (resembling the wave pattern formed by two pebbles dropped in a calm lake). The interference pattern on the plate thus "stores" the image of the vase. When a laser light of the same frequency as the original is directed through the plate, the interference pattern is "reconstituted" to form a three-dimensional holographic image identical to the original vase. One can see a replica of the vase, projected away from the plate, that appears three-dimensional in that the viewer can see different sides of it from different positions. Furthermore, if a section of the plate is removed, that section will still be able to project an image of the vase, albeit one less distinct. According to Pribram, the hologram provides us with a model of how memory is stored in the brain and later reconstructed.

Pribram (1978) has suggested that the brain can also work in a manner resembling a computer, especially when electrochemical connections are made between nerve cells. Pribram has made the generalization that the left hemisphere of the human brain's cerebral cortex works in a way resembling a computer program. The right hemisphere, however, works with images that are compatible with the holographic model. Images, unlike computer programs, can be comprehended in their totality even after brief exposures. They tend to be holistic rather than analytic. Images are compatible with the visual arts while programs are related to linguistics. I observed that traditional language teaching may be oriented to the left hemisphere, computer programming components of the brain, while suggestopedia may be oriented to the brain's right hemisphere, holographic image components.

If this were true, even to a limited extent, there would be individual differences in people's receptivity to suggestopedia. There would also be some topics that would have to be adapted into an image rather than as a program before they could be taught effectively through suggestopedia. Thus, it seems that suggestopedic foreign language instruction, which utilizes art, music, body language, dramatizations, and non-linear presentation of information (as in the "concert" sessions and by incorporating subliminal perception), would be compatible with the brain's ability to store memory holographically.

Forget That You Are Hungarian!

I also visited the suggestopedic class in English taught by Eva Furedi at the Feszek Club, an elegant building designated many years ago as "a club for actors, architects, artists, and other fools." The class, consisting of seven men and seven women, had been organized by the Hungarian Ministry of Culture. The class members, whose ages varied considerably, included actors, artists, art historians, journalists, writers, and workers in the television industry. The students were in the middle of the five week secondary course.

The other class had commenced at 2:00 P.M.; this class started at 8:30 A. M. and continued for four hours. The instructor in the first class I had observed spoke with an American accent; Furedi spoke with a cultured English accent and the difference could be noted in the students'

pronunciation.

Again, the students were seated in comfortable chairs arranged in a circle. Maps of several English-speaking nations covered the walls. Once again, I noticed a curious omission; the maps depicted Australia, Canada, Great Britain, Ireland, and the United States, but omitted such English-speaking "developing" nations as India, Jamaica, Liberia, Pakistan, and Nigeria.

Furedi pressed the lever on her tape-recorder, the students turned to their song sheets, and merrily rendered a lyric by the Beatles: "Will you still need me, will you still feed me, when I'm sixty-four?" I was told that the previous class session had been a "concert" and that this was the "elaboration" of that material.

A unit on "Youngsters will be Youngsters" in the Bulgarian-based materials was examined. Students took turns playing the roles of the parents and reading the dialogue. Furedi produced a rose which was passed from student to student; upon receiving it, each student attempted to give a sentence in English with a grammatical construction resembling one in the unit. Each response differed:

The way my child sings makes me proud.

The way he drives makes me terrified.

The way she makes love makes me depressed.

The class members then reverted to their constant roles, which were the same as those in the previous class. The instructor divided them into pairs and gave them an assignment: "Imagine you have just met on the street. One of you is on the way to a hotel and the other asks that person to stay at his or her flat instead." Later, several pairs were called upon to dramatize before the entire group. When the role-playing was routine or insipid, the instructor exhorted, "Forget that you are Hungarian!"

The next unit was named "A Perfect Cup of Tea" and took place at an Englishwoman's country estate. Again, there was role-playing with follow-up exercises. I noticed that Furedi introduced several supplementary exercises which stressed grammar and spelling; she took the position that those areas were only superficially treated in the Bulgarian materials. The instruction even used phonetic symbols to demonstrate the difference between voiced "th" words (as in "these" and "bother") and unvoiced "th" words (as in "thin" and "bathtub").

The next unit was "A Letter from Paul." After it was read, Furedi had the students locate each verb in the letter and find its object. Then each class member wrote a telegram to an imaginary recipient. The instructor moved into the next unit, a discussion with "Dr. Fox," an English physician who transplants organs. I speculated on how frequently the students would come across an English medical specialist, a member of the British gentry with a country estate, or some of the other interesting but uncommon types portrayed in the lessons.

When the instructor reached the unit on Bulgarian history and folklore, she told me she had supplemented this with student projects. One class member described a Hungarian folk dance and demonstrated it with the class' help. Another student, a beautiful and well-known actress, presented material on Arabian Folk art, passing around souvenirs she had purchased when she was in the Middle East.

The class discussed the weather, corrected the instructor's rendition of a story whenever she made a mistake, participated in an imaginary press conference, and sang "Leaving on a Jet Plane" and "Black is the Color of my True Love's Hair." The instructor added exercises on grammar, pronunciation, and spelling. And then it was time for a coffee break; the class had reached its midpoint with two hours to go.

It can be seen that suggestopedia moves at a rapid and intense pace. Those teachers who deviate from the Lozanov material claim that the lessons are to serve as "frames" for the program, not as "pictures." Furthermore, they note that the Bulgarian material has changed considerably over the years. It can also be observed that there are individual differences on the part of the instructors. However, each of the students I observed was using English fairly competently, some more than others. I was told that the critical test of their ability would come when all the classes had finished their fifty sessions. A four week study program in Great Britain was planned. The courses there would use traditional approaches but would be quite intensive. Some of the students hoped to try passing the state examination in English upon their return.

Subsystems of Consciousness

Suggestology has gained the reputation as the philosophy underlying a type of instruction that takes place in an altered state of consciousness. After observing suggestopedia in Bulgaria and Hungary, it is apparent to me that this concept is an over-simplification. If we examine the literature on altered states, we find that suggestopedia is basically an educational procedure which only incidentally brings about a shift in some of the components of human consciousness.

I have felt that it is useful to think of an altered state of consciousness as an overall pattern of experience and behavior in which a person feels that his or her consciousness is radically different from the way it functions ordinarily. This overall pattern has several components; Charles Tart (1975) has named them "subsystems" of consciousness and speculated that they are at least ten in number:

1. *Exteroception*, sensory perception of the external environment.
2. *Interoception*, sensory perception of one's bodily processes.
3. *Input-processing*, the way that a person makes sense out of one's perceptions.
4. *Emotions*.
5. *Unconscious processes*.
6. *Memory*.
7. *Sense of time and space*.
8. *Sense of one's identity*.
9. *Evaluation and decision-making*. 10. *Motor output*, bodily responses and processes.

Suggestology, at its best, involves the entire organism in learning. Thus, it seems to me, suggestopedia could involve a change in several of these subsystems. Memory can be enhanced, according to the experiments conducted by Lozanov (1978) which demonstrated heightened foreign language recall on behalf of students taught through suggestopedia. Exteroception could shift if the subliminal perceptual cues are both available and attended to. Unconscious processes could be altered if the "paraconscious" participates in learning through art, music, utilization of both left and right hemispheres, and the other procedures I observed at work in the Bulgarian classrooms.

Sense of one's identity may be temporarily changed if the role-play-

ing is intense enough for a student to "forget that you are Hungarian" during an exercise. If students can identify with the English-speaking (or Russian-speaking or German-speaking) person inside of them, they are more likely to acquire knowledge of a language. If the role-playing becomes intense, one's emotions can also undergo a change. Motor output could alter if body movement is encouraged during the dramatizations.

Perhaps a key to the effectiveness of suggestopedia is the extent to which the students' emotions are affected by the course. I have seen classes where participants go through the motions of the lesson in a lackluster way. It is difficult to see any alteration of consciousness in these individuals and one wonders how effective the instruction will be. I have also observed classes where the students are deeply involved in the process, playing their roles with zest and gusto. It seems to me that these participants would benefit more fully from suggestopedia.

None of the suggestopedia classes I have observed were notable for inducing dramatic alterations in consciousness about their participants. Lozanov (1978, p. 182) has addressed himself to the issue by observing that his experimental work with suggestopedia as well as the role that suggestive factors play in sleep learning, psychotherapy, and hypnosis "clearly shows that reserve capacities are tapped mainly because of the unconscious" and because of the way it permits "suggestive factors to operate in human communication." Lozanov observed:

"It is true that some altered states...do sometimes play a part in this process, but it is chiefly in exerting an influence as a suggestive placebo factor and less so as a state per se."

In other words, the relaxation encouraged in suggestopedia classes facilitate learning but more importantly, enhance motivation by building up the expectancy of students that something dramatic is going to happen. Observers expecting to walk into a suggestopedia classroom expecting participants to manifest dramatic alterations in consciousness, however, are likely to be disappointed.

Indeed, there may be a danger in learning a new language while one's consciousness is dramatically altered. Experiments in "state-bound learning" indicate that procedures which are learned in an altered state of consciousness can be forgotten when one returns to ordinary consciousness (Overton, 1971). Lists of numbers learned when one is drugged may be forgotten when the effects of the drug wears off, but can be recalled later when the drug is again administered. In everyday life, a person may awaken from a drunken night on the town and not recall where he or she placed the keys. After a few drinks, the location of the keys is suddenly remembered. If suggestopedia involved a radical change in consciousness, the material a student learned might only be recalled when a similar state of consciousness was attained.

Before I left Budapest, some of the instructors told me that their vision was to organize a center of suggestology and suggestopedia. This center could coordinate the courses being offered by the Technical University, the Ministry of Culture, and the Hungarian Scientific and Technical Societies. It could also initiate research, conduct follow-up studies, and prepare materials more suitable for students with a Hungarian cultural background. If this vision is ever actualized, it would be a boom for suggestology specifically and for education in general. I was quite impressed by the instructors I met in Budapest. They were talented professionals in various fields as well as being highly competent language teachers. Their enthusiasm, insights, and perspectives represent resources that deserve wider attention from those interested in human possibilities.

References

Chall, J. S. A decade of research on reading and learning disabilities. In S. J. Samuels (Ed.), *What Research Has to Say About Reading Instruction*. Newark, Del.: International Reading Association, 1978.

Cooper, L. F., and Erickson, M. H. *Time Distortion and Hypnosis*, *2nd ed*. Baltimore: Williams and Wilkins, 1959.

Goleman, D. Holographic memory. *Psychology Today*, February, 1979.

Krippner, S. The relationship of reading improvement to scores on the Holtzman Inkblot Technique. *Journal of Clinical Psychology*, 1967, *23*, 114-115.

Lozanov, G. *Suggestology and Outlines of Suggestopedy*. New York: Gordon and Breach, 1978.

Ostrander, N., and Shroeder, L. *Superlearning*. Englewood Cliffs, New Jersey: Prentice-Hall, 1979.

Overton, D. State-dependent learning produced by alcohol and its relevance to alcoholism. In B. Kissin and H. Begleiter (Eds.), *The Biology of Alcoholism*. New York: Plenum Press, 1971.

Pribram, K. Consciousness: A scientific approach. *Journal of Indian Psychology*, 1978, *1*, 95-118.

Pribram, K. *Languages of the Brain*. Moscow: Progress, 1975.

Tart, C. T. *States of Consciousness*. New York: E. P. Dutton, 1975.

La Suggestopédie à Budapest

Cet article décrit la visite de l'auteur à Budapest en Hongrie aussi bien que ses visites dans quelques classes suggestopédiques. Il fournit des exercices enseignés aux étudiants.

Suggestopädie in Budapest: um eine Sprache in fünfzig Tagen

Es handelt sich in diesem Artikel um einen Besuch des Verfassers in Budapest, Ungarn, wo er ein paar suggestopädische Klassen besucht hat. Beispiele über die verschiedenen suggestopädischen Aufgaben, die den Studenten beigebracht werden, werden angegeben.

Sugestopedía en Budapest

Este es un artículo de la visita del autor a Budapest, Hungaría, y también sus visitas a unas clases sugestopédicas. Se dan ejemplos de varias lecciones sugestopédicas que se enseñan a los estudiantes participantes.

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Indirect Verbal Suggestion: Its Use in the Classroom

Allyn Prichard

Abstract

The Erickson scheme for categorizing indirect verbal suggestion is presented, together with examples appropriate for public school classroom use.

Effective use of S.A.L.T. requires teachers to orchestrate all aspects of the classroom atmosphere in order to exert maximum suggestive impact for the purpose of freeing the mind's learning reserve. The avenues available to the S.A.L.T. practitioner for the purpose of creating suggestive impact are: both verbal and nonverbal communication, novel aspects of the methodology, classroom decor, type and sequence of instructional activities and materials, pupil peer suggestion and pupil auto-suggestion.

Those avenues encompass the entire range of possibilities for communication in the classroom with the exception of psychic channels, which may possibly be used but are not yet believed to be fully reliably trainable. Entire textbooks could and hopefully someday will be written about the possibilities for suggestive impact through each of the seven avenues mentioned above. Yet, interest in this highly fruitful way of defining effective teaching is only beginning to mount. Although this paper deals with only part of one of the seven avenues for suggestion, i.e., indirect verbal suggestion, it is hoped that impetus will be provided for extensive research into the subtleties of this powerful teaching tool.

It is important for the reader to remember that it is possible to be very subtle with verbiage, thus creating strong impact through indirect, non-authoritarian communication. The art of using indirect suggestion may be described as giving careful, casual direction, all the while allowing the student a certain illusion of freedom within the framework being created.

It is also very important for students to know that their unconscious mind is more powerful than they realize — that there exists a tremendous amount of stored ability deep within them. S.A.L.T. practitioners know that the unconscious mind can accomplish remarkable things; it is a part of our methodology to make sure that students believe that also. Students must be willing to let other levels of their mind do things for them during passive review sessions and not depend entirely on conscious effort.

Several types of indirect verbal suggestion are catalogued in this paper in an effort to help S.A.L.T. practitioners become more aware of

the possibilities existent therein. The noted psychotherapist Milton H. Erickson (1976) has provided the scheme around which these suggestions are organized.

1. Truisms — These statements consist of very obvious truths given in a form that the student can easily accept:

Sooner or later you are going to be able to learn more easily than you ever have before.

Sooner or later you are going to be able to remember better than ever before.

Sooner or later you are going to enjoy class more than ever before.

Learning will probably come easier whenever you are ready for it to do so.

2. Yes Sets — This type of suggestion is designed to create a cooperative frame of mind within the student through any of three techniques:

a. Constructing a series of statements, the obvious answer to which is yes:

Is it Tuesday?

Are you here at school today?

Is it still before lunch?

Are you seated in that chair?

Are you ready to learn more?

b. For a student who is "goofing off," statements may emphasize the things he (supposedly) wouldn't do.

You wouldn't get up from your desk without permission...

Answer: Yes, I wouldn't.

You wouldn't forget your pencil again....

Answer: Yes, I wouldn't.

You wouldn't come in late....

Answer: Yes, I wouldn't.

c. More sophisticated suggestions containing a phrase which elicits a "mental yes" on the part of the student, coupled with another phrase suggesting conditions to occur as a result of the yes:

If you can relax, your mind can work for you in helpful ways....

Response: Yes, I can relax, so....

Before you begin to learn more and with greater ease, you ought to be comfortable.

Response: Yes, I ought to be comfortable before....

3. Compound Suggestions — These statements are composed of two phrases joined by an "and" or a slight pause. One phrase is usually a truism that initiates an accepting (yes) set, the other phrase is the suggestion proper. If the truism serves a motivator for the student, it becomes particularly effective:

It is going to happen and you won't have to worry about it happening because it will be so easy.

You already know how to experience pleasant sensations like the warmth of the sun on your skin. You can experience those same pleasant sensations just by recalling the memory of the time you actually felt the sun shining on you that way. Any time you want to, you can experience many kinds of pleasant sensations, just by relaxing and recalling the memory of the time those sensations occurred.

We know when you are asleep, your unconscious can dream, for we all remember those dreams sometimes. Dreams tell us that our unconscious has been at work. We also know that our unconscious mind can work at helping us learn, even while we are awake.

Every person has abilities only partly known to the self, abilities which have not yet come into full use. Learning faster and easier is one of those abilities which we will all experience more fully in this class.

When you first went to kindergarten or grade school, the matter of learning letters and numbers seemed to be a difficult task...Then it was very hard to recognize the letter "s" or tell a "b" from a "p." Then, script and print, even capital and small letters, were so different. But you learned to form a mental image of some kind. You didn't know it at the time, but it was a permanent mental image, which helped you learn. The images you will form in this class will also help you learn, even more so, now that you are going to learn to create them deliberately....

4. Binds — Statements like these contain questions providing the student a "free choice" among comparable alternatives. Any choice, however, facilitiates movement toward a desired response:

Would you like to relax quickly or slowly?

Do you want to learn 40 or 20 new words today?

Would you like to have your hands on your thighs or in your lap as you relax?

Will you be ready to learn all that your mind is capable of, this week or next?

Will you be ready to get over that kind of behavior today or tomorrow?

5. Double Binds — These kinds of statements cannot be answered by the

student through his usual conscious frame of reference. He must first relax and let other levels of his mind provide the answer:

What part of your body begins to feel most comfortable?

What kind of feelings are your images bringing to you?

Take the time you need to really learn and to experience those images during the relaxing time in which every movement spent this way is time spent in closer contact with more of your mind's learning capabilities...

You may have felt in the past that your mind is uncertain and confused during some lessons. And that's because the part of the mind you normally use does forget. Yet we know that your mind does contain memories and images and capabilities that it will share with you so that you can learn better and easier than ever before. And when will your mind make all these wonderful capacities available to you? Will it be during class? Will it come quickly or slowly? Today? Tomorrow?

You can learn while your body relaxes, for as you let go physically, your mind becomes sharper and clearer, able to both enjoy the music and experience whatever images rise up into your consciousness.

6. Contingent Suggestions — These statements are really another form of compound suggestion. Here, the contingent suggestion simply piggybacks onto the student's ongoing flow of behavior. When some questionable activity is difficult to stop, simply add the suggestion as an acceptable condition for the completion of the action. Another form of this suggestion is to make responses that are very likely to occur contingent on the "truth" of a suggestion:

Pick up those books on the way over there.

Sharpen your mind while you are at the pencil sharpener.

Begin to relax as you take your seats.

As you are opening your eyes now, you are wide awake, feeling fine and ready to learn.

As you stand and stretch, your mind is even now getting ready to do more for you today.

As we sing this song, you remember how much fun it is to listen to the music we will play later.

7. Complex Contingent Suggestions — These statements have a well-defined form:

Negative statement——— a suggestion——ongoing flow of behavior.

Don't begin to use your mind in a different, more helpful way until you are completely relaxed.

Don't start to participate in this lesson and have an enjoyable time until you have your pencil out, ready to write.

Don't begin to learn more science than you ever have before until we select the music for the day.

Don't let your test scores get any higher until a little time passes by this year.

8. Not Doing, Not Trying — During music-filled relaxation periods, S.A.L.T. teachers ask students to relax and enjoy the music without focusing on the teacher's voice. These statements are designed to increase student acceptance of the fact that powerful mental processes can proceed on their own:

You don't have to talk or move or make any kind of effort.

You don't even have to keep your eyes open.

You don't have to move or even bother keeping your eyes open. You can just remain comfortable and quiet and not bother with anything.

You don't have to concentrate or even try to remember, you can just sit there and enjoy the music and let your mind do its thing with no direction from you.

Fully integrating the power of suggestion into one's teaching style is of course a formidable task — particularly considering the fact that most teachers have no background from pre or inservice training for such an undertaking. Yet, "even a journey of a thousand miles begins with a small step," and becoming proficient in the use of indirect verbal suggestion is one of those steps.

Discovery of the "teacher power" to be gained (and the student benefits to be realised) from careful, persistent use of the power of suggestion will be one of successful pedagogical journeys of the 1980's.

References

Assagioli, R. *Psychosynthesis* . New York: Hobbs, Dorman, 1965.

Bateson, G. *Steps to an Ecology of Mind* . New York: Ballantine, 1972.

Bogen, J. The other side of the brain: An appositional mind. *Bulletin of the Los Angeles Neurological Sciences* , 1969, *34* , 135-162.

Erickson, M. *Hypnotic Realities* . New York: Irvington Publishers, Inc., 1976.

Erickson, M. & Rossi, E. Two-level communication and the microdynamics of trance. *American Journal of Clinical Hypnosis* , 1971, *18* , 153-171.

Gazzaniga, M. The split brain in man. *Scientific American* , 1967, *217* , 24-29.

Jung, C. *The Structure and Dynamics of the Psyche* . New York: Pantheon, 1960.

Luria, A. *The Working Brain* . New York: Basic Books, 1973.

Perls, F. *Gestalt Therapy Verbatim* . Lafayette, CA: Real People Press, 1969.

Sperry, R. Hemisphere disconnection and unity in conscious awareness. *American Psychologist* , 1968, *23* , 723-733.

La suggestion verbale indirecte: son emploi dans la salle de classe
L'auteur présente le schéma de Erickson consacré aux catégories de la suggestion verbale indirecte avec des exercices convenables pour l'utilisation dans les écoles publiques.

Indirekte Verbalsuggestion: die Anwendung im Klassenzimmer
Das Erikson Schema für die Einordnung von indirekter Verbalsuggestion wird samt Beispielen, die für die Volschule passend sind, dargelegt.

Indirecta verbal sugestión: Su uso en la clase
El plan de Erickson por el clasificar de indirecta sugestión verbal se presente juntamente con ejemplos apropriados por el uso en la clase de escuela pública.

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Case Study--Now Johnny can Read

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Abstract

This report discusses the application of the Lozanov approach to remedial reading for one specific case. The case study outlines the procedures used and the subsequent outcomes over a period of three months.

Introduction

A noticeable tension permeated the air the instant Johnny and his mother entered my office at Al Batin Academy in King Khalid Military City. They had just arrived in Saudi Arabia from Columbia, Maryland. Johnny's father had accepted a high position on a military project with the Saudi Arabian government.

Johnny avoided any direct glances and, at first, I thought he probably feared headmasters, but his mother exhibited evasive behavior as well. After exchanging niceties the whole truth came out. By then I had guessed it. Johnny had a serious problem; he could not read. Worse yet, he had been diagnosed as having a serious neurological dysfunction that interfered with his learning. Johnny could identify only a few initial consonants and it was obvious that both mother and son were extremely disturbed by the whole affair. It was difficult to determine which one was most upset, but later it was obvious that the mother took first place.

I did what I could to reassure them and get both of them to trust me. I offered to work with Johnny each day in my office. This offer of assistance was met with gratitude by the mother, but Johnny reacted negatively. "Are you going to give me a test?" he asked. "No," I replied, "a test is unnecessary. We'll just have lots of fun and you'll see how easy it is to read." I offered Johnny's mother coffee and shared a Pepsi with Johnny. We chatted about Saudi Arabia and soon both Johnny and his mother freely discussed their exciting trip.

Johnny and I liked each other immediately. I gave him every ounce of encouragement I could, as spontaneously as possible. I made my first appointment with Johnny, giving him a few days to adjust to his new environment.

It was quite obvious that formal diagnosis was out of the question. Johnny was seven years old and in first grade for the second time. His records indicated a high average IQ (WISC). His oral language development was not appreciably different from his peers. But he exhibited every type of avoidance technique I had ever encountered in my clinical work.

Since I generally view diagnosis as an "ongoing process", I gave no tests but made careful observations instead. I noticed that his visual and auditory discrimination appeared to be adequate, but he lacked skill in both visual and auditory memory. He was extremely "uptight", and had a very poor self-image and attitude about learning. This is a typical

symptom and, as in other cases, I felt that the Lozanov techniques were exactly what this child needed. His former treatment had been very synthetic in nature and he could not "see the forest because of the trees".

Procedure

A. The parents

I conferred with Johnny's parents at length about Johnny's problems and their role in helping to resolve them. I asked them to do the following: Refrain from discussing Johnny's problems in his presence, and give Johnny positive input at every opportunity, especially where self-image and learning were involved.

B. The classroom teacher

Johnny's classroom teacher became involved in the case and, by careful consultation, she reinforced everything I was attempting to do in the remediation sessions. She also made careful observations to facilitate the ongoing diagnosis.

C. The SALT sessions

I decided to try every technique I could find or develop to help Johnny overcome his fear of reading. The primary objective of each lesson was suggestive and de-suggestive in nature, designed to build a positive self-image and learning attitude. At the same time, the lessons were devised to de-suggest the barriers he had developed and to penetrate the protective shell with which he had surrounded himself. In time, I discovered this suggestopedic sequence which seemed to work best with Johnny.

1. Preparation Phase (5 minutes)

This was absolutely necessary in Johnny's case, so I used the various mind calming techniques available to us. (i.e., white cloud, EPLR, deep breathing, etc.)

2. Active Phase (25 minutes)

I used language experience almost exclusively early in this session, followed by dramatic presentation of problem sounds and words with Johnny involved in repetition. These were words Johnny had difficulty remembering as he read his stories back to me. This will become clear as you study the lesson outlines.

3. Passive Phase (15 minutes)

During this final phase, I continually presented problems and easy words to Johnny with the triad of intonation. I used background music and rhythm with a special effort to keep time with it. Johnny's task was mainly to relax and listen to the music. (Note: As the following lesson samples indicate, I was very careful to integrate the content of all three phases into a meaningful whole. Thus, the activity in the preparation phase became the material for the active phase. Often the active phase was also psychodramatic in nature.)

D. The lessons

I began our endeavor by getting to know Johnny well; delving into his background of experiences, his deep feelings, his strengths and weaknesses, his likes and dislikes. Actually, this process started at the first encounter and continued throughout the remediation. A few sample lessons follow. (Note: I do not refer to my work as remedial or clinical to parents or students. Instead, I call whatever facility I am using an "Enrichment Workshop". The lessons are designed to be personally enriching and academically profitable.)

Lesson Plan: 1 Date:

New Name

Objectives:

A. Reduce fear of making errors.

B. Reduce avoidance techniques.
C. Develop new self image.
D. Vehicle of suggestion/de-suggestion.
E. Provide content for lesson.

Preparation Phase: (5 minutes)

A. Deep breathing and positive suggestion.
B. Discuss favorite heroes.
C. Develop theme of who you would like to be. Attributes are free of personal weaknesses and fears.

Active Phase: (25 minutes)

A. Language experience-student or teacher writes new biography (input from both).
B. Student reads biography orally.
C. Dramatic activity with problem words. (Problem words are put on flashcards for use during the passive session.)
D. Visual imagery practice.

Passive Phase: (15 minutes)

A. Teacher uses dramatic approach to present words (music, intonation, rhythm).
B. Student mentally visualizes words.

Note: Words learned is an outcome, not an objective.

Lesson Plan: 2 Date:

Continuation of New Name

Objectives:

A. Mind calming.
B. Reinforce new self image.
C. Bring about extinction of learning barriers.
D. Develop memory.

Preparation Phase:

A. White cloud and positive suggestion.
B. Discuss new self (vehicle to facilitate new biography development in active phase).

Active Phase:

A. Language experience-finish new biography. (Don't push this; use as many periods as necessary.)
B. Read biography, review words, learn new words from biography.

Passive Phase:

A. Teacher uses dramatic presentation of new words.
B. Student relaxes and develops mental images of words. (Music, intonation and rhythm are used.)

Lesson Plan: 3 Date:

New Name Reinforcement

Objectives:

A. Reinforce affective aspects of new biography through suggestion.
B. Review total language part of biography (content).

Preparation Phase:

A. A mind calming activity. (This was, and continued to be, important for Johnny.)

Active Phase:

A. Teacher and student dramatize new words.
B. Allow rhythm to be a subtle syllabication process.
C. Read "whole" biography again.

Passive Phase:

A. Teacher-dramatic presentation of words (music, intonation and rhythm).
B. Student relaxes and visualizes words.

Lesson Plan: 4 Date:

Objectives:

A. Provide for mind calming and open mind.

B. Develop visual imagery (both fantasy and word visualization).

C. Provide for an intuitive learning vehicle.

Preparation Phase:

A. Do white cloud exercise.

B. Suggest fantasy trip to wherever the student wishes to go while in the cloud.

Active Phase:

A. Write about experience. (Teacher writes on chart paper and makes flashcards with key words from the story.)

B. Engage in visual imagery with words.

Passive Phase:

A. Teacher sings words to background music (rhythm, intonation).

B. Student attends to flashcards passively.

List of Suggested Imagery Activities

1. Have students imagine themselves being their favorite hero (experience the person wholly).

Objectives: Change self-image, raise learning expectations, create positive learning attitudes, and provide for language experience, incidental word attack, vocabulary development--other skills according to student needs.

Suggestions:

You are as good as this favorite person of yours.

You can do anything you put your mind to.

He does everything easily, so can you. (The teacher must behave in such a way as to show students he or she really means it.)

2. Early Pleasant Learning Recall. (See earlier instructions.)

Objectives: Develop positive attitudes about learning, raise learning skills, and develop needed reading skills.

Suggestions:

Learning is fun and easy.

Relaxation engages your automatic learning devices and improves memory.

3. Hot air balloon trip. (See instruction detailed earlier.) Note: Taking imagery trips has countless possibilities as indicated by the objectives. The trips can also involve vehicles such as: white cloud, mountain top, flying saucer, magic carpet, hang glider, large bird, etc. The student can go anywhere he wishes, experience what he wishes with the teacher's help.

Objectives: Provide for deeper relaxation and vivid imagery, provide a vehicle for language experience, provide feelings of freedom from inhibition, provide for content of lesson, provide for concept development, and provide for remediation of word difficulties through follow-up activity.

Suggestions:

You will enjoy this trip and see many things.

You will learn many new words and how to spell them.

You will feel freer than ever before.

You can write whatever you feel.

You will learn and remember new words and reading skills.

4. New names and biography. Lozanov suggests this practice at the onset of corrective classes.

Objectives: Reduce fear of making errors, reduce avoidance techniques on the part of students, develop new self concepts, develop

positive learning attitudes, and raise learning expectations.

Suggestions:

Read about the new you.

He is everything you want to be and can be. (Note: The new biography is very carefully written by the teacher to fit the needs of the student in relation to his psychological setup.)

5. Word visualization. Take time for the student to mentally see problem words.

Objectives: Allow time for the student to integrate the spelling of a new word along with its meaning.

Suggestions:

See the whole word.

See the syllables.

See the whole word again.

You'll remember the word. (Note: Do this with the Dolch words during an active and passive session.)

6. Read short but interesting stories to children. Have students vividly imagine characters, action and endings. Have students reconstruct portions of the story. Stories should reflect interests and emotional needs. Children should always share feelings and ideas. Stories should be dramatic and exciting with both tragic and happy endings.

Objectives: Create interest and emotional need for reading, provide character identification, provide for emotional outlet, develop group unity and acceptance, develop appreciation for reading as an emotional experience, and provide a vehicle for vocabulary development.

Suggestions:

This story is exciting.

You will learn about life as it is (or isn't).

You will enjoy doing something together, you're all equal, yet different.

You will see and appreciate the excitement of the story.

You will want to read stories like this.

7. Vividly imagine an emotional experience. It might be happy, sad, exciting or nerve-wracking. Write about the experience and share it with peers. (Note: This should be a series of lessons--writing happy, then sad, stories followed by other stories of varied emotional tones.)

Objectives: Provide the student an opportunity to express his emotions and share with others, provide new insights into self, provide for group belonging, provide a stimulus for language experience, provide a vehicle for vocabulary development, and reduce hostility toward those who have hurt them.

Suggestions:

We've all had good and bad experiences.

We are all more alike than different.

By sharing we can help each other.

We can learn from each other.

8. Situational activity whereby the group solves specific problems as a team. Example: You are all members of a fire department. A young boy crawled to the top of a large tree. Together you must plan a way to get him down. First write your individual plan, then get together and come up with a written master plan. (Note: These activities should be reported using Police Department problems, medical teams, etc.)

Objectives: Provide for group interaction, acceptance and cooperation, provide a stimulus for language experience, provide content for remedial instruction, provide stimulus for reading, reduce avoidance and withdrawal tendencies, and develop ease in writing ideas down.

Suggestions:

By putting your ideas together you can solve problems.

You can learn new ideas and words from each other.

Everyone's ideas are worthy.
Any idea can easily be written down.

This list outlines other activities I used. The teacher must always adapt the activity to fit both the psychological and academic needs of the child. In Johnny's case, the academic outcomes were very automatic. He learned to read to expectancy level in a very short time. There were some important factors I had to keep in mind in Johnny's case, and my approach had to reflect these:

A. Johnny was extremely "uptight" and exhibited failure syndromes and avoidance techniques. Therefore, mind calming activities were essential and helpful.

B. Professional neurological reports indicated mental process dysfunction. This is not necessarily a problem if the child is allowed to compensate. However, his former treatment involved only crash phonics programs which often inhibit the compensatory process. Thus, the whole word approach was used and any phonics that were taught were incidental, if not accidental.

C. Careful integration of the content from the preparation phase to the passive phase was essential. Johnny had to see the "whole" and process its parts in his own way.

D. Transition to the textbook had to be successful. I had promised him he'd learn to read easily. This moment of moving into books was crucial. I chose a primer level Scott-Foresman and exposed Johnny to the vocabulary in conjunction with his language experience without his knowledge of it. He flew through his first book in a few minutes. From then on his learning barriers reached extinction as he read, read and read. I continued to expose him to difficult vocabulary prior to actual book assignment. Thus, vocabulary control on the part of the teacher is essential.

E. Intensive practice with visual imagery proved to be important in Johnny's case.

F. Carefully placed positive suggestion continued to be important. The more subtly presented, the more effective it proved to be.

G. Lessons had to be carefully planned and standard rituals were in order. Johnny needed to structure his learning environment.

H. The use of music, rhythm, and intonation were in order for each lesson to facilitate easy memory.

Summary

Johnny arrived at Al Batin Academy in early March of 1978 without any functional reading skills. Some facilitative factors did exist (i.e., desire to read, auditory and visual discrimination, intelligence, etc.). he inability to compensate.

Unfortunately, Johnny left the academy in early June. But in three months Johnny had gone from a nonreader to a fluent reader at a second grade level. No follow-up has been possible, but at Christmas time of 1978, I received a letter from his mother saying that Johnny was doing much better.

Johnny's self-image, attitude toward learning, and reading skills have improved appreciably. Whether he was able to hang onto his "new self" remains to be seen.

Maintenant "Johnny" sait lire
Ce compte rendu discute l'utilisation de l'approche de Lozanov avec un problème d'apprentissage de la lecture. Il trace les procédés employés et présente les résultats étudiés pendant trois mois.

Versuchsfall: Jetzt kann Hans lesen
In diesem Bericht wird die Anwendung der Lozanov Methode auf Abhilfslesen für einen spezifischen Fall diskutiert. Der Versuchsfall skizziert die angewendeten Prozesse und die folgenden Ergebnisse während einer Zeitspanne von drei Monaten.

Ahora Juanito puede leer

Este reportaje discute la aplicación del acceso de Lozanov a la lectura remediadora por un caso específico. El estudio en este caso delinea los procedimientos usados y resultados subsiguientes sobre un período de tres meses.

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The Lozanov Effect: A Scientific Explanation

Douglas Shaffer

Abstract

What is presented here is possibly a scientific explanation for the way in which the Lozanov Method achieves accelerated learning. Evidence is presented that voluntary hyperventilation increases the pH of the body fluids through the increased elimination of carbon dioxide, thus lowering the threshold of the neurons. In such a state, learning becomes easier and more efficient. Experiments were also cited in which the reverse effect occured: carbon dioxide impairs memory consolidation.

Evidence is also offered which calls into question the extent to which the founder of suggestopedia himself may understand the principles and mechanisms underlying his method. Similarly, certain features of Lozanov's elaborate ritual have been shown to be marginal, if not superfluous. Though the specially selected music used during the concert session does not appear to enhance learning, it does promote relaxation. Visualization, at least as applied in the concert session, appears not to improve foreign language learning. The role of alpha rhythm as a factor in memory enhancement has been refuted.

Such a reconsideration of the Lozanov Method confirms the learning enhancement claimed by Lozanov, singles out a particular mechanism for it, and points up the need for redesigning the method so as to capitalize maximally upon the Lozanov effect.

A clearer understanding of suggestopedia will surely lead future researchers to systems designs that build more optimally upon the revolutionary Lozanov effect.

Introduction

Although suggestopedia is aptly characterized as Dr. Georgi Lozanov's "psychotherapeutic system (based on yoga) applied to education" (Ostrander & Schroeder, 1976: 70), the foremost Western researcher of the Lozanov Method, Dr. W. Jane Bancroft, states unequivocally that "there is no mysticism, whether of the religious or communist variety, in the Lozanov language class." (Bancroft, 1975: 18).

Suggestopedia is a teaching method which accelerates learning some five to ten times over conventional learning. In addition, the rate of learning retention is much greater than that in conventional learning. As its founder has repeatedly emphasized, it is *not* hypnosis, and students remain alert and in complete self-control throughout the process of instruction. In addition to greatly reducing the amount of review and repetition needed in any type of learning, suggestopedia is effortless. In suggestopedic classes, learning takes place rapidly without tedious drills, boring repetition, or hard work.

The founder of suggestopedia is Dr. Georgi Lozanov, a psychiatrist in Sofia, Bulgaria, who a decade and a half ago learned of the techniques for improving memory as practiced by scores of yogis in Bulgaria and India. After prolonged investigations into yogic hypermnesia ("supermemory"), Lozanov adapted the same basic techniques to a more conventional classroom setting.

Although it is the techniques derived from yoga which are most responsible for rapid learning, there are several other elements in suggestopedia.

Placebo factcrs and the desuggestion of limited abilities are also used. (Anything which exerts a suggestive influence is a placebo, like the sugar pills which the doctor sometimes prescribes. This part of suggestopedia is "the power of positive thinking".) The teacher is charged with encouraging the students by every word, gesture, and expression. He or she should convince the students that the material to be learned is easy and should inspire confidence in themselves and in their ability to master the subject.

Basic aural-oral techniques are also used in suggestopedic foreign language classes, though pattern drills are not used — apart from scant attention given to paradigms.

Doubtless as a reflection of Lozanov's background as a psychologist, suggestopedia emphasizes simulated real-life communicative use of the foreign language and makes abundant use of role playing.

Attitudes toward suggestopedia fall into three groups. First, there are those ardent proponents of the method who have accepted Lozanov's claims at face value, his explanations of the method as sound, and his descriptions of the operational procedures as complete. Next, there is a small group of researchers who have been impressed by the results of suggestopedic instruction which they have witnessed in Eastern Europe, but who have questioned both the completeness of Lozanov's descriptions of the instructional procedures and also the adequacy of his explanation as to how suggestopedia works. Last, there is a group of researchers who, upon examining Lozanov's claims and data, remain thoroughly skeptical. Most teachers and members of the public at large who have heard something about the method have far too little information and experience with suggestopedia to form an intelligent opinion, even though it is this group of people who would be most affected by the success or failure of the method.

There are in fact good reasons for skepticism. Those who have merely heard the seemingly exaggerated claims and found the many glaring weaknesses in Lozanov's data (especially if they have not witnessed effective results by suggestopedic instruction) can come to no other conclusion than that the entire method is overrated and mostly without merit. For example, Thomas Scovel, a psycholinguist of note, recently reviewed the English adaptation of Lozanov's main work, and his conclusion falls in this category. His point of departure was one of academic objectivity, cognizant of the possible potential of the method if its claims were valid and aware of the impact which his review might have upon many linguists (Scovel, 1979: 255):

"As this decade draws to a close, we can clearly observe that one of the major changes in foreign language teaching which has characterized the seventies has been the contribution of disciplines other than general linguistics to our field. I think most of us will agree that these contributions, by and large, have been efficacious...It is important, therefore, that the possible contributions of the well-published work of the Bulgarian educator and psychiatrist, Georgi Lozanov, should be carefully considered by the TESOL membership, especially since there already exist several organizations in North American and Europe which are active in the proselytization of his approach and its application to a method for teaching English as a foreign language. Consequently, it is with a grave sense of responsibility that I have accepted the task of reviewing the first English translation of his major work."

After careful consideration of the book, Scovel was led to the following conclusion — the final sentence in his review (Scovel, 1979: p.

266) — by the book's many discrepancies and outright errors, its lack of precision, its seemingly inflated claims and its vaguely described and even invalid experimental procedures:

"If we have learnt anything at all in the seventies, it is that the art of language teaching will benefit very little from the pseudoscience of suggestology."

A recent review of suggestopedia in *Saturday Review* focused upon suggestopedia in North America (often referred to here as SALT, an acronym for suggestive-accelerative learning and teaching). Its author, Jack Fincher, noted that despite the claims by proponents, there were widely varying results by the method. While neither rejecting nor endorsing suggestopedia, he concluded with words of caution (Fincher, 1978: 64):

"Critics would do well to ask themselves — and the suggestologists — a couple of questions that would occur to anyone familiar with the perils of pedagogy and with the pitfalls of social research. First, in such a multifaceted approach who can say what makes the difference — heightened suggestibility, physical and mental calisthenics, guided imagery, fantasy, or role-playing? And second, what about student motivation, teacher dedication, or some critical mass of mutual enthusiasm-?...Just how such vital truths are to be teased out, the suggestologists cannot yet say. Until they can, all their claims should be taken with a grain of S-A-L-T."

W. Jane Bancroft, Sheila Ostrander, and Lynn Schroeder are foremost among those long-time observers of the Lozanov Method who have been impressed with its results which they have witnessed in Eastern Europe, but who have sought out fuller accounts and explanations of the techniques than Lozanov has been able to provide. Scovel's review, for example, characterized Bancroft as "a person who impresses me as one of the most prudent and responsible reporters on the suggestopedic method that I have read." (Scovel, 1979: 264). The present author wholly concurs, adding that it was Professor Bancroft who alone succeeded in searching out and reconstructing previously obscured but crucial procedures in the memory reinforcement session. Indeed, not until Bancroft had come upon these techniques and published a description of them in 1975 was it finally possible to replicate Lozanov's work and to obtain the results claimed by Lozanov. The incredible story of this search is detailed in Bancroft (1976).

In their publications and at international conferences Georgi Lozanov and his staff refer again and again to accelerated learning at the very same conferences they display absolutely no instances of rapid learning. Neither have they spoken of the style of breathing that suggestopedic classes have in fact utilized in Eastern Europe. Despite such claims of spectacular success with the method in Eastern Europe, most attempts at suggestopedic instruction elsewhere (and indeed all such attempts before Bancroft's reconstruction in 1975) have had far more modest results.

Most close observers of suggestopedia who have researched suggestopedia on location in Eastern Europe report a reluctance on the part of Lozanov and his colleagues to disclose fully all the basic elements of the method. They attribute this to the fact that Lozanov's work has been in parapsychology, an area which East European governments regard as highly sensitive. Consequently, Lozanov and his staff have been bound by governmental regulations classifying some aspects of their work. The East European governments which have sponsored research in parapsychology also exhibit an ambivalence towards it: at times they regard it as unscientific, non-materialistic, mystical, and thus not in conformity with the official political doctrine of dialectical materialism; at other

times they recognize the possibility that parapsychology may yet hold great promise and jealously withhold some of their discoveries from nations which they regard as unfriendly.

As a result, after the first few years of his work with suggestopedia, Lozanov was forced to obscure his method's origins in yoga. Nevertheless, long-time observers point up the primacy of techniques derived from yoga. For example, it has been noted that "without the yoga elements there seems to be little memory improvement." (Ostrander & Schroeder, 1976: 70). Indeed, Jane Bancroft's reconstruction of Lozanov's classroom procedures had involved not only interviews with staff and students in Eastern Europe, clocking of the rhythm of a taped memory reinforcement session, and close scrutiny of Lozanov's writings, but also sufficient attention to analogs with yoga techniques.

Until now one or more of the following elements have been commonly thought to be the most essential components of suggestopedia: relaxation, desuggestion of limited abilities, alpha state learning, the musical accompaniment. However, there are problems in attributing accelerated learning to any of these.

In the case of relaxation, Julian Biggers and Mathias Stricherz (1976) found that relaxation inhibits learning. Georgi Lozanov himself had earlier reported that physical relaxation is not necessary for accelerated learning (Lozanov, 1971, p. 275) and even reported that relaxation without concentration does not result in learning (Lozanov, 1977).

In the case of the desuggestion of limited abilities (the so-called "placebo effect"), the Bulgarian government commission members investigating suggestopedia in the mid-sixties learned a foreign language via suggestopedia despite their total skepticism (Ostrander & Schroeder, 1970, p. 301).

In the case of alpha state learning, Donald Schuster (1976) found that in some conditions students learn less in the alpha state than out of it. Neurophysiologist Olof Lippold (1973) has further refuted the view that alpha waves are in any way related to learning.

In the case of a musical accompaniment, Peter Kline (1976) relaxed and played foreign language tapes against tapes of musical selections used in classes at Sofia but learned nothing.

Although instances of effective learning in the absence of a supposedly crucial suggestopedic component have been combined here with instances of non-learning despite the presence of the same, the conclusion is inescapable: one after another, each of the elements commonly thought to constitute the key to suggestopedia falls by the wayside.

Working from a physiological perspective, the author of the present paper has assembled a series of neurophysiological and biochemical facts which are offered to explain the accelerated learning arising from certain of the suggestopedic procedures. This paper grows out of the author's research into suggestopedia since early 1977. During that time, using procedural descriptions by Bancroft (1975) and by Ostrander and Schroeder (1970) as a starting point, the author has obtained the accelerated learning in foreign language classes as claimed by Lozanov and has sought out some scientific explanation for what he has called the Lozanov effect of hypermnesia.

The synaptic theory of learning and memory has been accepted as the basis for explanation, since it is the position most widely held at present among neurophysiologists and psychologists. Although no definitive conclusion is yet possible, the synaptic hypothesis is more parsimonious than the alternate hypotheses and has generally received increasing empirical support. The evidence offered here to explain the Lozanov effect — (1) chemical effects of hyperventilation, (2) the effects of pH of the blood and body fluids upon neuronal stimulation, (3)

the retrograde amnesia induced by the administration of carbon dioxide, and (4) memory and learning enhancement induced by certain drugs — stands in close harmony with the standard synaptic theory. It is asserted that the Lozanov effect achieves memory and learning enhancement by lowering the carbon dioxide concentration of the blood through voluntary hyperventilation, thereby raising the pH (alkaline concentration) of the body fluids and thus increasing the excitability of the nerve cells. In this way, it is maintained, learning and memory consolidation occur faster than by ordinary means.

The present paper also raises the possibility that Dr. Lozanov, the originator of suggestopedia, is himself totally unaware of the key mechanism responsible for accelerated learning by his method. riginator of suggestopedia, is himself totally unaware of the key mechanism responsible for accelerated learning by his method. This point is most important, since it has a strong bearing on whether or not the method thus far used by Dr. Lozanov and his colleagues makes optimal use of the Lozanov effect. This paper calls into question the need for a number of the elements of Lozanov's rather elaborate ritual. In its present form Lozanov's method appears ill-suited to mass instruction, despite the great efficacy of the Lozanov effect (Shaffer, 1978). Indeed, in Eastern Europe, suggestopedic foreign language instruction has been limited to a handful of specialized institutes with limited enrollments.

The Suggestopedic Effect of Accelerated Learning

Both Georgi Lozanov himself and close observers of suggestopedia consider the yoga-inspired session to be responsible for accelerated learning. Indeed, this is the one and only unique feature of suggestopedia, and it is for this reason that Jane Bancroft turned her attention to the session in searching for an explanation of suggestopedic hypermnesia. As she pursued her studies, evidence mounted that the style of breathing during the session was somehow responsible for the heightened memorization. She pointed out that yoga had long held that there is a link between respiration and consciousness, between respiration and concentration. Although he had usually avoided direct reference to respiration, Lozanov himself had often spoken similarly of "concentration" and "mental relaxation" as key elements in his method.

However, no explanation within a conventional scientific framework was ever offered for the suggestopedic effect of enhanced learning. Lozanov's specialization in parapsychology led some observers to seek an explanation in the paranormal, outside of presently recognized scientific principles. Even such astute observers as Jane Bancroft, Sheila Ostrander, and Lynn Schroeder attributed an important role in hypermnesia to mental telepathy (Bancroft, 1975, p. 13; Ostrander & Schroeder, 1976, p. 72).

In point of fact, the Lozanov effect of enhanced learning is a wholly physiological phenomenon, explainable by conventional science. Recent discoveries in nerve cell research now clarify how the procedures used during the session achieve accelerated learning.

In approaching suggestopedic hypermnesia from a physiological standpoint, it is important first to note how physiology regards even ordinary learning and conventional memory. However learning is defined, neurophysiologists agree that learning involves sensory input and that it involves memory. Indeed, learning and memory are both neurophysiological processes initiated by sensory stimuli. Another point relevant to a consideration of the Lozanov effect is that it is possible to alter learning and memory — impairing, totally disrupting, and

enhancing them. In each case the mechanism acts by altering action at the synapse (the gap-like junction between nerve cells) during or shortly after learning.

The brain is continually receiving trains of signals set off by such external stimuli as sound and light as they impinge on the sense organs. Once stimulated, these sense organs transform the external stimuli into a series of electrical and chemical impulses which quickly reach the brain through complex networks of billions of nerve cells (neurons). These nerve impulses travel across the cell network by means of excited neurons stimulating other neurons and so on down the line until the impulse reaches its final destination. It is like a train of gunpowder, with each explosion setting off the next.

Typically a neuron consists of a main body (the soma), numerous receiving antennas called dendrites, and a long fiber (the axon) which carries outgoing information from the cell body to other neurons. Once nerve impulses reach the end of the axon, they trigger the release of chemical transmitters contained in tiny sacs there (called synaptic knobs). When these transmitter substances are released, they flow across the synapse (gap) and trigger a new impulse in neighboring neurons. Some chemical transmitters facilitate triggering impulses, whereas others inhibit them.

The transmitter substances affect the firing pattern of neighboring neurons (facilitating or inhibiting them) by depolarizing or hyperpolarizing the membrane of those nerve cells. The neuron at rest (that is, the nerve cell when it is not conducting nerve impulses) has a negative charge compared to the outside of the nerve cell. It is the electrochemical action by the transmitter substances across the synapse which triggers an impulse by lowering the stimulation threshold of the membrane of a nearby cell or which inhibits stimulation by raising the threshold.

At a symposium on learning and memory in the fall of 1963 John C. Eccles and A.M. Uttley happened to touch upon what would become the very essence of the Lozanov Method, still to be developed on another continent several years later. Eccles and Uttley's discussion reflects the level of scientific knowledge then, before the full implications and potential applications of new knowledge had come to light. The point as it foreshadowed application of a Lozanov effect to pedagogy is so significant, so revolutionary that the context in which it was made is reproduced below (Kimble 1965: 44-45):

Eccles: I am quite familiar with the suggestion that Galambos has made, that glial cells could be concerned in learning because they are so very slow in their responses. Svaetichin has also made related suggestions. But recent experimental investigations by Hild and Tasaki and by Kuffler and Potter certainly show that glial cells do not give electrophysiological responses that can be significant in relation to adjacent neuronal activity. The glia seem to play no role except a nutritive one.

Of course, this nutritive function is important. But for our present purposes we can safely assume that they are not directly concerned in synaptic action.

Uttley: But a nutritive function might have control of the absolute threshold of the neuron, and so be a means of varying and setting at different levels the overall sensitivity of the neuron, might it not? This would be a form of learning.

Eccles: Oh, yes, that is quite true. But it is not necessary to have glial cells to do that. One has only to alter the oxygen or carbon dioxide concentration of the blood and one alters the threshold of the neurons....What I'm trying to say is that, of course, one can alter the operation of neurons by various procedures.

Hyperventilation (deeper and/or faster breathing than normal) has long been known to reduce the amount of carbon dioxide in the blood and body fluids. This follows from the fact that a gas having a higher partial pressure interchanges with one having a lower partial pressure. Thus, the more oxygen inhaled, the more carbon dioxide exhaled as the venous blood flows through the lungs. Hyperventilation flushes out much of the acid carbon dioxide and the bicarbonate buffer pair which otherwise would restore the original acid-base balance (p H) of the blood and body fluids.

It is now known that the neurons are highly sensitive to changes in the acid-base balance of the surrounding interstitial fluids: alkalosis greatly increases neuronal excitability, whereas acidosis depresses neuronal activity (Guyton, 1976, pp. 624-625; Brown, 1972). The increase in pH (rise in alkalinity) caused by the flushing out of carbon dioxide through hyperventilation thus lowers the stimulation threshold of the neurons. *In such conditions learning consolidation occurs faster*.

For several decades researchers have recognized that a period of time is necessary for the memory trace to become consolidated in neural tissue for storage and recall. Some have spoken of short-term memory in contradistinction to long-term memory, though recent studies indicate that the process involves more than merely two distinct stages. (Cf. Gibbs, 1979). By the early 1960's it was recognized that various anesthetics could impair or completely disrupt retention during the consolidation period. Conversely, the administration of such stimulants as strychnine or picrotoxin during the consolidation phase was found to enhance memory and learning. The sooner the facilitory or inhibitory agent was given, the greater its effect upon retention. Francis Leukel and Elton Quinton chose carbon dioxide as the anesthetic for their experiments in memory disruption because of that compound's convenience over other anesthetics: its rapid onset and brief duration of treatment. Over the next decade there followed a number of experiments with carbon dioxide administered to rats, mice, and cockroaches — all with the same result. When given shortly after training, carbon dioxide disrupts memory consoldation. If given some time later, however, carbon dioxide has no effect upon memory or learning.

Although the researchers experimenting with carbon dioxide induced retrograde amnesia did not know the mechanism involved, Marie Gibbs recently tested the effects on the short-term memory of chicks by three biochemical inhibitors (potassium chloride, monosodium glutamate, and lithium chloride) chosen specifically for their ability to dampen neuronal excitability. Like carbon dioxide, they were found to impair short-term memory when administered around the time of learning.

Thus, the Lozanov effect achieves memory and learning enhancement by lowering the carbon dioxide concentration of the blood through voluntary hyperventilation, thereby raising the pH (alkaline concentration) of the blood and body fluids, and thus increasing the excitability of the nerve cells. s.

All the experiments in altered learning through carbon dioxide-induced disruption show that this compound acts upon short-term rather than long-term memory. Once the multi-stage process of memory consolidation passes beyond a certain point (usually 5 minutes or so after learning), carbon dioxide has no effect upon memory. Involving as it does altered learning through modified carbon dioxide levels, the Lozanov effect achieves hypermnesia by acting upon the short-term phase of memory consolidation. Though apparently unaware of the experiments involving carbon dioxide induced retrograde amnesia, Lozanov reported an experiment of his some years ago in which one of

two suggestopedic groups was not given either a concert session or a subsequent elaboration. Tested against a control group, which performed quite poorly by comparison, bfter the session. when both groups were retested several days later. In the case of the group with an active session (but no concert session or elaboration), not so much of the material had come into long-term memory from short-term memory. The other suggestopedic group performed at the same high rate of retention on the retest as on the initial test. On this basis, Lozanov concluded that the concert session and the elaboration move the material into long-term memory (Lozanov, 1977). Though there is independent evidence to support Lozanov's findings about the elaboration, the usefulness of the concert session to memory improvement now appears doubtful. (See the following section entitled "The Concert Session.")

The Concert Session

Under the influence of yoga practices, Lozanov and his colleagues developed a two-part session as an analog to outward and inward concentration in yoga. During the first half of the session the students' eyes are open, and their concentration is focused visually upon an external object (the printed text of the dialog). During the second half of the session the students' eyes are closed, and their concentration is upon the inner world of their mind — the inward visualization of the dialog context (Bancroft, 1975; pp. 12, 17-18). In addition, it appears that the function of the musical accompaniment in the concert session is the same as that of Indian music for the yogi (Bancroft, 1975; p. 23).

Electroencephalographic studies by Lozanov's institute show that the alpha activity by the students' brains increases considerably during the concert session (Bancroft, 1975; p. 23). The increased alpha activity during the concert session arises from the specific musical background (Bancroft, 1975; 22, 27) and also from the closing of the eyes. Since the very beginnings of research upon alpha wave production in the human brain in the late 1920's, it has been recognized that open eyes inhibit alpha activity, whereas closed eyes in a subject promote alpha production. It has also been recognized for a long time that any sort of conscious mental activity, such as a simple arithmetic calculation, even when performed with closed eyes, interrupts alpha production. Lozanov further reports that students produce 10 - 15% more alpha when in the passive presentation phase (without instructions to make images) than in the active presentation phase with imagery instructions (Schuster, 1976, 120).

It would therefore seem that Lozanov uses specially selected music together on in order to offset the decreases in alpha production caused by increased mental activity (visualization). Lozanov apparently believes that such visualization promotes further learning and that the music chosen is necessary to boost the alpha production sufficiently for such visualization.

Despite the interesting and original thinking that has gone into Lozanov's concert session, there is evidence that the concert session does not enhance learning.

The possiblity that the alpha state — in this case promoted by the specially chosen music — could accelerate learning has been specifically refuted by a recent study by a neurophysiologist at the University of London (Lippold, 1973, p. 30). In 1973 Olof Lippold challenged the assumption that alpha waves are a reflection of the underlying electrical activity of the brain. Instead, he amassed evidence to show that alpha

waves are in fact the electrical concomitant of tremor in the extra-ocular muscles which move the eyeballs. The tremor in the extra-ocular muscles modulates a pre-existing potential source. Lippold explained the effects of brain stem lesions and ablation experiments not by attributing consciousness to alpha production but rather by showing that the brain stem region is the site of the oculo-motor nuclei as well as other afferent and efferent fibers (Lippold, 1973, p. 46-47). Lippold concluded his study with the following observation (Lippold, 1973; p. 242): "Alpha rhythm has always been regarded with distaste and a certain amount of skepticism by neurophysiologists. It has been a trivial phenomenon of interest perhaps only because its nature has been obscure. It is with the greatest regret that I must leave it still a trivial phenomenon, but one whose origin, in my view we now are in some measure able to explain."

Indeed, neither the musical accompaniment nor the visualization of dialogue context, singly or together, seems to promote memorization. In his experiments the author has been unable to use the concert session to enahnce memorization beyond the level achieved by the active session. Mme. Maud Forget, a yoga specialist with twenty-six years experience who runs one of Paris' leading yoga schools, likewise holds that music is not necessary in suggestopedic hypermnesia but that it is the style of breathing and reading which together constitute the key element in the Lozanov Method, (Bancroft, 1978: personal communication). Lozanov's own data demonstrated that the concert session does not assist in memorization, (Lozanov, 1971; pp. 294-297). Donald Schuster further reports that subjects trained in EEG biofeedback to produce the alpha state were unable to learn even as well as by rote memorization when they were simultaneously given association (mnemonic) instructions (Schuster, 1976; p. 120).

In light of the physiological evidence that explains the Lozanov effect, the paucity of references to physiology by Lozanov in all his writings and talks (except for pulse rate, blood pressure, and brain waves) leads one to suspect that Lozanov himself is totally unaware of the role of carbon dioxide elimination and pH inherent in his methods. Even the extensive bibliography in Lozanov's main work failed to list such literature. It would appear that having discovered existing techniques in yoga which enhance memory, Lozanov merely adapted them to the classroom without understanding the mechanisms involved. Lozanov and his colleagues would also seem to have designed the concert session with just as little understanding of the alpha rhythm.

Nevertheless, when some suggestopedic classes at Sofia achieved enhanced learning without music, the students immediately complained of stress, tension, and fatigue (Ostrander & Schroeder, 1979; p. 74). Thus, future redesigned suggestopedic formats will probably have some place for a (shorter) musical background towards the close of the session — though without the visualization of the dialog context — as a means of ending the class in a relaxed state of well-being.

Conclusion

Physiological research shows that considerable repetition, often boring and tiresome, is usually necessary in learning (Campbell, 1965; p. 257). Mnemonics and other methods of unusual associative devices constitute one means of enhancing memory, though such methods are restricted to limited types of information. Georgi Lozanov has provided another means of accelerating and expanding learning, and its underlying mechanism indicates that it is applicable to learning all types of in-

formation.

Despite the strong probability raised here that Georgi Lozanov has developed a method whose mechanisms he has failed to comprehend, let there be no mistake about the significance of his work. Georgi Lozanov has developed a method of accelerated instruction which will revolutionize education as no one has ever done before. Comenius, Dewey, and a host of other educators over the ages pale in comparison. Perhaps the closest comparable advances in education were books, which ever since have formed the backbone of education. Perhaps moderrnday parallels exist in the celluloid and electronic media. However, there is one important difference between all these and the advance which Lozanov has made: all the other things have been external to mankind, involving tools and other extensions of man. The Lozanov effect and its applications are *internal* to man, going to the very center of his brain and learning processes. If rulers burn books, ban films, and censor radio and television, these things may be lost to the reach of mankind. By contrast, what has entered the human mind cannot be reached by censorship or the destruction of equipment and supplies.

References

Bancroft, W. J. *The Lozanov Language Class* . Toronto, 1975.

Bancroft, W. J. Discovering the Lozanov Method. *Journal of SALT*, *1* (4), Winter, 1976.

Bancroft, W. J. The Lozanov Method and Its American Adaptations. *Modern Language Journal* , April 1978.

Biggers, J. & Stricherz, M. Relaxation and Suggestion in a Recognition Task. *Journal of SALT* , *1* (2), Summer, 1976.

Brown, A.M. Effects of Carbon Dioxide and pH on Neuronal Membranes. *Federation Proceedings* , *31* (5), 1972, September-October.

Campbell, H.J. *Correlative Physiology of the Nervous System* . London, 1965.

Fincher, J. Education Now. *Saturday Review* , March 18, 1978. , January 25, *81* (1139).

Guyton, A.C. *Textbook of Medical Physiology, 5th ed., Philadelphia, 1976.* .

Kline, P. The Sandy Spring Experiemnt. Journal of SALT , 1976(Spring), *1* (1).

Leonard, R.E. & Rigter, H. Changes in Brain Monoamine Metabolism and Carbon Dioxide Induced Amnesia in the Rat. *Pharmacology, Biochemistry & Behavior* , 1975, *3* (5).

Leukel, F. & Quinton, E. Carbon Dioxide Effects on Acquisition and Extinction of Avoidance Behavior. *Journal of Comparative and Physiological Psychology* , 1964, *57* (2).

Lippold, O. *The Origin of the Alpha Rhythm* . Edinburgh, 1973.

Lovell, K.L. & Eisenstein, E.M. Dark Avoidance Learning and Memory Disruption by Carbon Dioxide in Cockroaches. *Physiology and Behavior* , 1973, *10* (5).

Lozanov, G. *Suggestologia* . Sofia, 1971. on Suggestive-Accelerative Learning and Teaching and Suggestopedia, Ames, Iowa, April 1977.

Lozanov, G. *Suggestology and Outlines of Suggestopedy* . New York, Gordon and Breach, 1978.

Ostrander, S. & Schroeder, L. *Psychic Discoveries behind the Iron Curtain* . Englewood Cliffs, New Jersey, 1970. (Page references are to the Bantam Book edition of 1971).

Ostrander, S. & Schroeder, L. *The ESP Papers*. New York, 1976.

Ostrander, S. & Schroeder, L. *Superlearning*. New York, 1979.

Miller, N.E., Paolino, R.M. & Quartermain, D. Differential Temporal Gradients of Retrograde Amnesia Produced by Carbon Dioxide Anesthesia and Electroconvulsive Shock. *Journal of Comparative and Physiological Psychology*, 1966, *62* (2).

Rigter, H., Van Eys, G. & Leonard, B.). Hippocampal Monoamine Metabolism and the Carbon Dioxide Induced Retrograde Amnesia Gradient in Rats. *Pharmacology, Biochemistry & Behavior*, 1975, *3* (5).

Rowan, R. That Filing System Inside Your Head. *Fortune*, August 28, 1978.

Schuster, D. The Effects of the Alpha Mental State, Indirect Suggestion, and Associative Mental Activity on Learning Rare English Words. *Journal of SALT*, 1976, (Summer), *1* (2).

Scovel, T. Review of Lozanov 1978. *TESOL Quarterly*, 1979, *13* (2).

Shaffer, D. Adapting Suggestopedia to Mass Instruction: Taking English to a Wider World. *Journal of SALT*, 1978, (Winter), *3* (4).

Taber, R. & Banuazizi, A. Carbon Dioxide Induced Retrograde Amnesia in a One-Trial Learning Situation. *Psychopharmacologia*, 1966, *9*.

Van Eys, G., Rigter, H. & Leonard, B.E. Time-Dependent Aspects of Carbon Dioxide Induced Amnesia and Hippocampal Monoamine Metabolism in Rats. *Pharmacology, Biochemistry & Behavior*, 1975, *3* (5). June), *37*.

Wasterlain, C.G. Carbon Dioxide Anaesthesia Inhibits RNA Synthesis. *Brain Research*, 1970, *21*.

L'effet Lozanov: une explication scientifique

Ce qui suit peut être une explication scientifique des moyens que la méthode Lozanov emploie dans l'apprentissage accéléré. Il est évident que l'hyperventilation volontaire augmente le pH des fluides du corps par une plus forte élimination de carbone dioxyde abaissant de ce fait le seuil des neurones. L'apprentissage devient plus facile et plus efficace dans une telle situation. On cite aussi des expériences où l'effet contraire se produit: le carbone dioxyde affaiblit la consolidation de la mémoire. L'évidente question se pose de savoir jusqu'à quel point le fondateur de la Suggestopédie lui-même comprend les principes et les mécanismes qui sous-tendent sa méthode. Pareillement on a montré que certains aspects du rituel compliqué de Lozanov sont marginaux sinon superflus. Quoiqu'il ne semble pas que la musique choisie spécialement pour le concert favorise l'apprentissage, elle encourage néanmoins la relaxation. Il apparaît que la visualisation, au moins dans son application au concert, n'améliore pas l'apprentissage des langues étrangères. On n'a pas admis le rôle des ondes alpha dans le développement de la mémoire. Une telle reconsidération de la méthode de Lozanov confirme la facilité de l'apprentissage avancée par Lozanov, y distingue un mécanisme unique, et signale le besoin de revoir la méthode pour profiter au maximum de ses effets. Une meilleure compréhension de la Suggestopédie conduira les chercheurs de l'avenir à des systèmes structurels reposant de manière plus satisfaisante sur l'effet révolutionnaire conçu par Lozanov.

Die Lozanov Wirkung: eine wissenschaftliche Erklärung

Was hier dargelegt wird, ist die erste wissenschaftliche Erklärung dafür, wie die Lozanov Methode schnelles Lernen ermöglicht. Beweis wird geliefert, daß freiwillige Hyperventilation das ph der KörperflüBigkeiten durch den erhöhten Verbrauch von Kohlensäure steigert, dadurch wird die Schwelle der Neuronen gesenkt. In solch einem Zu-

stand wird das Lernen leichter und wirksamer. Es wurden Experimente zitiert, in denen die umgekehrte Wirkung vorkam: Kohlensäure reduziert Erinnerungskonsolidierung. Man bietet auch Beweis, der den Umfang in Frage stellt, mit dem der Gründer von Suggestopädie selbst die Prinzipien und Mechanismen davon versteht. Gleicherweise ist auch gezeigt worden, daß bestimmte Grundzüge von Lozanovs kunstvollem Ritual unbedeutend sind wenn auch nicht überflüssig. Obgleich es scheint, daß besonders ausgewählte Musik, die während des Konzerts benutzt wird, das Lernen nicht erhöht, fördert sie die Entspannung.

Es scheint auch, daß die Übung damit, sich Bilder zu machen, mindestens wie es im Konzert verwendet wird, das Lernen von einer Fremdsprache nicht verbessert. Die Rolle von Alpharhythmus als Faktor in einer Gedächtniserhöhung ist auch widerlegt worden.
Solch eine nochmalige Überlegung der Lozanov Methode bestätigt die Lernenerhöhung, die Lozanov beansprucht, hebt einen bestimmten Mechanismus dafüur heraus und weist auf die Notwendigkeit hin, die Methode umzuarbeiten, sodaß man so viel wie möglich auf die Lozanov Wirkung konzentrieren kann.
Ein besseres Verständnis von Suggestopädie wird zukünftige Forscher sicher zu Systemenentwürfen führen, die dann die revolutionäre Lozanov Wirkung optimaler gestalten.

El Efecto de Lozanov: Una explicación científica.
Lo que se presenta aquí es posiblement una explanación científica por la manera en que el método de Lozanov logra el saber acelerador. Evidencia se presente que hiperaeración voluntaria acrecienta el pH de los flúidos del cuerpo por la eliminación aumentada de carbon bióxido, así bajando el umbral de neurones. En tal estado, el aprender se hace más fácil e eficiente. Investigaciones se citaron en que el efecto reverso se ocurió: carbon bióxido empeora la consolidación de memoria.

Evidencia tambien se presente que cuestiona la extensión a lo cual el fundador de Sugestopedia a si mismo entienda los principios y mecanismos que estan debajo su método. Similaramente ciertas facciones de rito elaborado de Lozanov se han mostrado ser marginales, si no superfluas. Aunque la especialmente escogida música usada durante la sesión concierta no se parece aumentar el aprender, ella promueve relajación. La visualación, al menos como aplicada en la sesión concierta, no se parece mejorar el aprender de lenguas extranjeras. El papel del ritmo de alfa como factor en el aumentar de memoria se ha rebatido.

Tal nueva consideración del método de Lozanov confirma el encarecimiento reclamado por Lozanov, singulariza un particular mecanismo responsable e apunta la necisidad del nuevo designio del método como capitalizar lo más posible en el efecto de Lozanov. Un entendimiento más claro de Sugestopedia de seguro conducirá investigadores futuros a designios de sistemas que edificarán más optimalmente en el efecto de Lozanov.

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Comparisons of a Kinesthetic, Cognitive and Natural Strategy Relaxation Process

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Abstract

Relaxation has been found to be an effective technique in many settings with a variety of problems. Methods of relaxation vary with similar physiological effect and with varying effects on behavior. This study utilized 20 senior-year nursing students and compared their experiences on three relaxation procedures: 1) their currently-used strategy; 2) cognitive mind-expansion techniques (Open Focus); and 3) progressive relaxation techniques. Analysis of responses indicated that blood pressure generally was reduced following all three relaxation procedures. However, the least reduction was noted following Open Focus. Self-reported states of physical arousal indicated both Open Focus and progressive relaxation techniques reduced body tension, and Open Focus tended to produce the greatest, although non-significant, results. Since this mind expansion technique affected blood pressure the least, but provided the greatest self-reported sense of relaxation and well being, its usefulness in suggestive learning merits continued consideration.

Introduction

Relaxation techniques vary, not only in forms of presentation and resulting internal experience, but also in the outcome within treatment procedures. Methods of relaxation have increased over the last several decades. In persuing the relaxation literature, it is not uncommon to find in excess of twenty different labels for relaxation techniques. Included among the many are: autogenic training, progressive relaxation, shaking for relaxation, respiration and invigoration, Open Focus, hypnosis, hyperempiria, yoga (varying forms), meditation (various forms), and others. It is also common for professionals utilizing relaxation methods with clients or students to find varying responses to the relaxation, including problems with persons who cannot "get into" the experience. To date, only cursory investigations on the strategies for utilizing appropriate relaxation responses tailored to the needs of each person have been reported and conducted. Further, there seems to be no definitive information on types of internal processing and effectiveness of relaxation techniques, i.e., do predominantly auditory, visual or kinesthetic information processors require different strategies for relaxation?

Relaxation has been reported as an effective method of treatment in a variety of disorders, phobias, stress reduction/management, study behaviors, learning, memorizing, ego-strength boosting, hypertension and various psycho-physiological disorders (Goldfried & Trier, 1974; Schultz & Luthe, 1969; Fehmi, 1975; Paul & Trimble, 1970). Relaxation procedures have assisted in learning and education development (Robinett, 1974; Lozanov, 1978), and have demonstrated varying effects

on verbal learning and recognition tasks (Biggers & Stricherz, 1976). Physiological changes in various relaxation techniques tend to be similar in effect: a decrease in electromyographic tension, an increase in alpha wave generation, a decrease in oxygen consumption, a decrease in heart rate (Benson, 1977). Physiological changes are important issues in selecting strategies of relaxation for different types of problems.

This study gathered information concerning the responses of persons utilizing strategies for self-relaxation, comparisons of self-report of tension in two relaxation techniques, and blood pressure responses as a function of relaxation procedure.

Method

Subjects. The subjects were 20 senior class students in a hospital-affiliated school of nursing. The 17 female and 3 male students' mean age was 25 years. All were given the option of participating in relaxation procedures. One student had previous training in meditation and one had learned relaxation in a prepared childbirth class. All others were naive to formal relaxation training.

Procedure. The following steps were included in presenting relaxation to the subjects and in gathering data. The subjects were asked in all procedures to rest with their eyes closed. Blood pressure was monitored in each phase and a self-report questionnaire on state of arousal was administered. This form measured body experience using Likert scalings with the following stimulus words: fingers (3 times), me (4 times), breathing (2 times), hands (3 times), today, and anxiety. The form provided a base rate for waking tension indicators as well as change following relaxation.

Phase I: Current Strategy

The subjects were instructed to lie down. Approximately 7 ½ minutes were allowed. Blood pressure was monitored and the self-report questionnaire on body state was administered. The subjects were then instructed to relax as deeply as they could and were given approximately 12 minutes to accomplish the task. Blood pressure was monitored and a form to identify response style to current (natural) strategy of relaxation was given. This form included two paragraphs and an "other" section. The paragraphs described a cognitive imagery method of relaxation, a kinesthetic method and a blank "other" method of relaxation. The subjects were asked to check the method they used or to describe it in detail in the "other" section. Following, the subjects were allowed to interchange with one another, returned to normal waking states and were given information about tension in the body, medical problems associated with tension and the importance of utilizing tension management strategies.

Phase II: Progressive Relaxation

During this phase, the subjects were instructed in the procedure of progressive relaxation. This procedure included a tension-release sequence of muscle relaxation. The procedure started with the hands and included major muscle groups throughout the body, e.g., using instructions such as, with your right hand, "Make a fist, now--tense, hold, (pause) and release, relax and let your hand go limp. Note the difference

between the tension and the relaxation." This sequence required approximately 15 minutes.

Phase III: Open Focus

The subjects were given a preliminary introduction to Open Focus. An Open Focus short form experience (Fehmi, 1975) was initiated. Open Focus, a cognitive relaxation technique, requires the person to concentrate on the space between two body parts, e.g., "Can you imagine the space between your eyes....ears....tip of the nose and back of your head....., etc."

Results

The data were analyzed in several stages. Self-report questionnaires provided information about the internal responses to the different types of relaxation. Blood pressure changes as a function of relaxation techniques were noted and analyzed.

The data from the Likert items on states of arousal for the initial relaxation, progressive relaxation and Open Focus procedure are presented in Table 1. Analysis of the initial waking state assessment of body tension indicated four differences on the Likert categories existed among the three types of current strategies of relaxation (See Table 2). Combined scores of the Likert items yielded information about total body, total fingers, total hands, total me, breathing and the whole person and are presented in Table 3.

Table 1

Mean Response for Individual Likert Scaling Items on State Following Relaxation

Category (Scale adjectives)	Pre-Relaxation	Progressive Relaxation	OPEN Focus
1. Fingers (straight-twisted)	5.3	5.9	6.05
2. Me (helpless-secure)	5.5	5.7	6.05
3. Breathing (tight-loose)	5.8	6.0	6.0
4. Hands (wet-dry)	5.6	5.7	6.2
5. Today (loose-tight)	4.7	5.6	5.7
6. Me (frightened-fearless)	4.9	5.4	5.9

7. Hands (good-bad)	5.7	6.0	6.2
8. Breathing (careful-carefree)	5.6	5.9	5.6
9. Fingers (stiff-relaxed)	5.2	6.2	6.3
10. Me (calm-jittery)	4.5	5.8	5.9
11. Hands (tight-loose)	5.0	5.9	6.1
12. Me (carefree-worried)	4.5	5.4	5.6
13. Anxiety (clear-hazy)	5.3	5.6	5.3
14. Fingers (loose-tight)	5.2	6.1	6.2

N=20

Table 2

Significant Differences for Likert Items on Types of Natural Relaxation Strategies

Category (Scale adjectives)	Pre-Relaxation				
	Mind	Body	Other	F Value	Sig.
Fingers	6.0	5.6	4.2	6.04[1]	.01
Me	5.8	5.9	4.7	2.98[1]	.07
Fingers	6.6	5.3	3.7	3.61[1]	.05
Hands	6.4	5.0	3.8	3.32[1]	.06

[1] df=(2,17)

64

Table 3

Mean Response for Combined Likert Scaling Items on State Following Relaxation

Category	Pre-Relaxation	Progressive Relaxation	OPEN Focus
Total Response	72.7	80.9*[1]	82.8*[1]
Total Fingers	15.6	18.3*[1]	18.25*[1]
Total Me	19.4	22.2*[1]	18.25*[1]
Total Hands	16.3	17.6	18.4*[2]
Total Body	43.3	47.7*[1]	48.5*[1]
Whole Person	29.4	33.3*[1]	34.3*[1]

N=20

*Indicates greater than pre-relaxation

[1] $t \geq 2.6$, $p < .01$

[2] $t \geq 2.3$, $p < .03$

Responses in the type of strategy currently used in relaxation were analyzed. Of the 20 subjects, 5 utilized body strategies (i.e., viewed relaxation as a kinesthetic experience, felt their body tension, noting the source of tension and then reduced it by letting go); 9 used cognitive imagery strategies (i.e., went off to another place and enjoyed other fantasies or pleasant experiences that they recalled from the past); 6 utilized other strategies. These strategies included 2 subjects who used pseudo-meditation, while the other 4 apparently did not have an effective strategy and reported not being able to "get into" self-relaxation. Waking state responses by the type of strategy initially used in relaxing were analyzed, using a one-way analysis of variance. Significant differences on two categories of fingers were demonstrated. Two other categories approached significance, i.e., me and hands (See Table 2). The data indicated subjects who currently do not have a strategy, the "other" category, have more waking tension in their body than persons who have strategies for relaxation. Analysis during the formal relaxation techniques indicated no significant differences in response to various areas of the body remained among the groups.

T-tests were computed between means of the initial and both progressive and Open Focus relaxation techniques. With the exception of the hands category, in all cases individual and combined, the relaxation procedures significantly reduced tension. However, the two procedures, progressive and Open Focus, did not differ significantly in their reduction of tension. For the total hands, the Open Focus treatment significantly reduced the tension while progressive relaxation did not. Although not significant, responses to the Open Focus procedures were generally greater (less tension) for all responses.

Blood pressure reduction was significant in all procedures. An overall drop of 7.6 systolic and 3.7 mm Hg. diastolic (102.9/64.7) followed their current relaxation strategy. Progressive relaxation blood pressure decrease was 8.6 systolic and 2.3 mm Hg. diastolic (101.6/66.3). The blood pressure reduction after the Open Focus technique showed a reduction of 3.5 systolic and an increase of 0.2 mm Hg. diastolic (104.6/64.8). No significant differences in waking state blood pressure before the relaxation techniques among the cognitive, kinesthetic or "other" categories were noted. In addition, no significant differences in blood pressure existed before the relaxation procedures. The reduction of blood pressure was greater in the progressive relaxation and current strategy than in the Open Focus condition.

Discussion

Significant reductions following relaxation exist in a variety of subjective experiences of body state as well as in blood pressure. Differences in currently used strategies of relaxation existed with concomitant differential experience of tension in the body. Differences in self-report of arousal were eliminated as structured relaxation strategies were utilized. This study included both a very traditional tension-release sequence of relaxation and a newer approach that provides for mind-expansion and cognitive awareness.

Differences in relaxation approaches in learning processes have been demonstrated (Biggers & Stricherz, 1976). In that study, placebo alternatives of consciousness and control groups performed better on a recognition task in a verbal learning paradigm than did subjects who experienced fantasy, imagery, tension-release, or a combined form of relaxation. Those placebo conditions are more closely related to the Open Focus technique in this study than is the progressive relaxation. The subjective experiences demonstrated in this study tended to be greatest for the Open Focus condition, and since the reduction in blood pressure was the least in this procedure, it seems that cognitive and mind-expanding techniques might have continued application in relaxation learning paradigms, i.e., suggestive-accelerative, sleep learning, auto-suggestion, etc.

Although significant differences were found with relatively small numbers of subjects having varying methods available for relaxation in the waking state, it is important that these results be established with larger numbers of subjects as well as with physiological measures of tension, i.e., EMG, GSR, etc. Additionally, continued research is needed in determining physiological correlates of various types of relaxation. This seems increasingly relevant since the emerging and promising literature on hemispheric laterality indicates techniques may have varying effects on subjective, cognitive and perhaps physiological experiences (Rennels, 1976; Caskey, in press). Techniques that provide for either a right, left or both hemisphere experience may be differential in their responsiveness in learning. In addition, techniques that provide for bilateral hemispheric input, i.e., music background, may be susceptible to increased learning utilizing a cognitive mind expansion procedure such as Open Focus or hyperempiria (Gibbons, 1974).

Continuing research is needed to demonstrate differential relaxation treatment approaches as well as further investigation of the utilization of a subject's current relaxation strategies. This research addressed the acquisition of relaxation strategies for individuals who currently do not use a mind-body style. The data indicated that once a structured re-

laxation procedure is learned, subjects that initially had no strategy for relaxation do not differ in body tension following relaxed states. Further research seems warranted on the procedure for utilizing self-relaxation currently employed by the client, expanding the procedure and in many cases, tailoring specific procedures with a subject's natural strategy.

References

Benson, H. *The relaxation response* . New York: William Morrow & Company, 1975.

Biggers, J. & Stricherz, M. Relaxation and suggestion in a recognition task. *Journal of Suggestive-Accelerative Learning* , 1976, *1* (2), 101-106.

Caskey, O. *Suggestive-accelerative learning. Englewood Cliffs, New Jersey; Education Technology Publications, 1980(in press).*

Fehmi, L. Open focus training . Paper presented at Biofeedback Society, February 5, 1975.

Gibbons, D. Hyperempiria, a new "altered state of consciousness" induced by suggestion. *Perceptual and Motor Skills* , 1974, *39* , 47-53.

Goldfried, M., & Trier, C. Effectiveness of relaxation as an active coping skill. *Journal of Abnormal Psychology* , 1974, *83* (4), 348-355.

Lozanov, G. *Suggestology and outlines of suggestopedia* . New York: Gordon and Breach Science Publishers, 1978.

Paul, G. & Trimple, R. Recorded vs "live" relaxation training and hypnotic suggestion: Comparative effectiveness for reducing psychological arousal and inhibiting stress response. *Behavior Therapy* , 1970, *1* , 285-302.

Rennels, M. Cerebral symmetry: An urgent concern for education. *Phi Delta Kappan* , 1976, *57* (7), 471-472.

Robinett, E. *The effects of Suggestopedia in increasing foreign language achievement* . Unpublished doctoral dissertation, Texas Tech University, 1975.

Schultz, J. & Luthe, W. *Autogenic Methods* . New York: Grune & Stratton, 1969.

Une comparaison de trois processus de relaxation: "kinesthetic," cognitif et naturel

On a trouvé que la relaxation est une technique utile dans beaucoup de circonstances et de problèmes variés. Les méthodes de relaxation varient avec le même effet psychologique et avec des effets variés sur le comportement. Cette expérience été faite sur 20 infirmières de quatrième année et leurs réactions ont été comparées à trois procédés de relaxation: 1) leur comportement habituel; 2) des techniques cognitives d'ouverture d'esprit (la concentration ouverte); et 3) des techniques de relaxation progressive. L'analyse des réponses a indiqué que la tension artérielle avait généralement baissée à la suite des trois procédés de relaxation. Cependant les chercheurs ont noté la baisse la moins importante après la concentration ouverte. Les infirmières ont observé elles-mêmes que la concentration ouverte et les techniques de relaxation progressive ont réduit la tension du corps et que la concentration ouverte avait tendance à produire les meilleurs résultats quoique négligables. Puisque cette technique d'ouverture d'esprit modifie le moins la tension artérielle mais fournit la meilleure relaxation et le meilleur bien-être d'après les observations des infirmières, son emploi dans l'apprentissage mérite une plus ample considération.

Vergleiche von einem kinästhetischen, wahrnehmbaren und einem durch eine natürliche Strategie herbeigeführten Entspannungsprozess

Es ist herausgefunden worden, daß die Entspannung in vielen Situationen mit verschiedenen Problemen eine wirksame Technik ist. Die Entspannungsmethoden ändern sich mit ähnlicher psychologischer Wirkung und unterschiedlichen Wirkungen auf das Verhalten.

Die vorliegende Untersuchung benutzte zwanzig Krankenpflegestudenten, die im letzten Studiumsjahr waren, und verglich ihre Erfahrungen in drei Entspannungsprozeßen: 1) die Strategie, die jetzt benutzt wird; 2) wahrnehmbare Geisteserweiterungsmethode (offener Mittelpunkt); 3) progressive Entspannungstechniken. Analyse der Antworten deutete darauf hin, daß der Blutdruck nach allen drei Entspannungsmethoden im allgemeinen gemildert wurde. Aber die kleinste Verminderung wurde nach offenem Mittelpunkt bemerkt. Selbstberichtete Zustände der körperlichen Erregung wiesen darauf hin, daß offener Mittelpunkt und progressive Entspannungsmethode körperliche Spannung verminderten und daß offener Mittelpunkt zu grösseren obgleich unbedeutenden Ergebnissen führte. Da diese Geisteserweiterungsmethode auf den Blutdruck am wenigsten wirkte aber das größte selbstberichtete Gefühl der Entspannung und des Wohlbehagens verschaffte, verdient ihre Nützlichkeit im suggestiven Lernen weitere Berücksichtigung.

Comparaciones de kinestético, cognoscitivo y natural proceso de relajación. La relajación se ha encontrado ser una técnica efectiva en muchos lugares con una variedad de problemas. Métodos de relajación varia con semejante efecto fisiológico y con variantes efectos en conducta. Este estudio utilizó 20 estudiantes, enfermeras al último año, y comparó sus experiencias sobre 3 procesos de relajación - 1. su estrategia de uso actual, 2. cognoscitiva técnica de extender la mente (foco abierto), y 3. técnica progresiva de relajación. El análisis de respuestas indicó que la presión de sangre se bajó por lo general detrás de todos 3 procedimientos de relajación. Además, la reducción menor se notó tras foco abierto. Estados auto-relatados de excito físico indicaron que y foco abierto y técnica de relajación progresiva reducieron tensión corporal, y foco abierto tuvo tendencia producir las resultas mayores, aunque no significantes. Desde que esta técnica de extender la mente afectó la presión de sangre el menor, pero provino el sentido autorelatado más grande de relajación y bien estar, su utilidad en el aprender sugestivo merece consideración continuada.